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Office and Bedside Evaluation Of Pulmonary Function

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One is aware of breathing only when adequate ventilation of the lungs requires an unaccustomed effort. One is normally conscious of an increased rate and depth of breathing during vigorous exercise. Dyspnea refers to an increase in the work of breathing out of proportion to the physical exertion. The work of ventilation may be pathologically increased by several different mechanisms: (1) Increase in bronchiolar resistance as in bronchial asthma, (2) Obstruction of larger airways as with pressure on the trachea or major bronchus, (3) Stiffening of the lungs due to congestion, as in left ventricular failure or mitral stenosis, (4) Stiffening of the lungs due to pulmonary fibrosis as in silicosis, berylliosis and sarcoidosis, (5) Limitation of motion of the thoracic cage, as with pleural fibrosis and rheumatoid spondylitis, (6) Need for an increased thoracic cage motion as with paralysis of the diaphragm, and (7) Need for increased ventilation and circulation as with anemia of considerable degree. In addition, the sensation of dyspnea may arise from an increase in pulmonary ventilation out of proportion to physiologic needs, as may occur during attacks of acute anxiety. A great deal has been written about the characterization of the status of pulmonary function by detailed and complex laboratory studies, but relatively little has appeared concerning the means by which pulmonary function can be assessed at the bedside or in the office of a general physician.

There are several reasons why a physician may need to assess pulmonary function in the course of evaluating a patient. He may need to determine whether the primary complaint of dyspnea has its origin within the lungs or elsewhere. It may be desirable to determine whether there is an impairment of pulmonary function which may be contributing to the symptomatology. An assessment of pulmonary function should be a part of every complete physical evaluation of a patient who had serious pulmonary disease in the past or who is in middle or late life. It is frequently helpful to determine whether a patient has adequate pulmonary reserve to warrant referral to a thoracic surgeon for surgical management of bronchiectasis or a carcinoma. If the problem is approached rationally and with attention to the physiologic principles involved, a rather good assessment of pulmonary function can be made in the office of a general physician. Table 1 has been prepared to aid in the differentiation of the common causes of dyspnea with a minimum of equipment.

Methods for evaluation of pulmonary function in the office:

History
Physical examination
Vital capacity, observing the performance
Exercise tolerance (walking-talking tolerance)

History

In addition to the routine history and system review one should obtain the following information: (1) History of previous pulmonary disease in the past, such as pneumonia, empyema, pleural effusion, spontaneous pneumothorax, bronchial asthma, tuberculosis and chronic bronchitis. (2) History of dyspnea. If present, what is the pattern it takes? Is it accompanied by wheezing? Is it seasonal or year-around? (3) History of exposure to toxic inhalants such as silica, beryllium, as-

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bestos and silo fumes. (4) Duration and amount of smoking. Almost every patient with pulmonary emphysema is or has been a heavy smoker. (5) A careful statement of the patient's accustomed activities. Does he engage in sports, walking, climbing, and the like, or has he discontinued all physical activity which would tax his pulmonary system? Frequently a stoical patient will deny dyspnea on exertion, simply because he has not exerted himself. It may require specific questions to ascertain that he engages in almost no physical activity because his breath is too short to permit it. The best method of assessing this factor is to ask whether the patient can keep up with others of his age at various activities. (6) If dyspnea is present, is it associated with pain, present on exertion, or present on lying down, and is it ever associated with paresthesias in the fingers and carpopedal spasm? (7) The presence of a cough, whether it is productive or not. Many patients with pulmonary emphysema discount their chronic cough because they say it is just due to cigarettes. This may well be the case, without doubt, but the presence of a cough indicates bronchial irritation which plays a very great role in pulmonary emphysema. Characteristically such patients state that they have a cough on arising in the morning and that it takes 15 to 45 minutes for them to clear the mucus from the throat and chest. The mucus arises from the irritated bronchial tree, and the reason for the long period of time required to raise it is that the expulsive power of the cough diminishes with the progress of the chronic bronchitis, bronchiolitis and emphysema.

Physical Examination

In addition to the routine inspection, percussion and auscultation of the chest, particular attention should be paid to certain features. The shape and motion of the thoracic cage are noted at rest during deep inspiration. The expulsive force of expiration can be evaluated by asking the patient to blow out a match while holding it at arms length. A normal person should be able to extinguish a match under these conditions with only moderate pursing of the lips. A patient with mild impairment of expiration may be able to do so with greater pursing of the lips so as to increase

Table 1.—Differential Diagnosis of Dyspnea

	Clinical Findings	Vital Capacity		Auscultation of Lungs
Pulmonary Causes		Amount in Relation to Normal	Speed of Expiration	
Allergic asthma	Paroxysmal dyspnea	Reduced* Normal**	Slow Fast	Sibilant rales Normal
Obstructive Emphysema	Chronic exertion dyspnea; no spring-fall pattern	Reduced	Slow	Distant breath sounds; few sibilant rales
Emphysema plus bronchiolitis	Chronic exertion dyspnea with acute exacerbation; no spring-fall pattern	Greatly reduced	Very slow	Moist and sibilant rales
Pulmonary fibrosis	Shallow respiration	Reduced	Fast	Harsh breath sounds with or without rales
Rheumatoid spondylitis	Rigid spine, fixed thoracic cage	Reduced	Fast	Diminished breath sounds; limited excursion
Paralyzed diaphragm	Increased thoracic motion	Reduced	Fast	Normal
Nonpulmonary Causes				
Angina pectoris	Associated with characteristic pain and radiation	Normal or slightly reduced	Fast	Normal
Congestive heart failure (not cor pulmonale)	Edema, high venous pressure	Reduced	Fast	Moist rales, fluid
Anemia	Hemoglobin 7 Gm. per cent or less	Normal	Fast	Normal
Obesity	Very fat	Slightly reduced	Fast	Normal
Airway obstruction	Stridor	Reduced	Slow	Local stridor

*Attack
**Remission

the velocity by reducing the size of the stream. A patient with moderate emphysema will be unable to extinguish the match even with severe pursing of the lips. He may be able to blow the flame to one side but not to extinguish it. In the section on vital capacity there is a discussion of the mechanisms underlying slow expiration.

Any inequality of the two sides of the thoracic cage should be noted both in the resting position and during maximum inspiration. The chest should be auscultated during an inspiration which follows immediately upon a maximum expiration and a cough. Such maximum collapse of the lungs often brings out moist rales during the succeeding inspiration. Such rales indicate either infection with an increased mucus or congestion due to congestive heart failure.

The presence of sibilant rales (wheezes) should be noted. Sibilant rales simply indicate that there are multiple points of partial obstruction throughout the lungs, and thus they indicate expiratory obstruction. They are of no help in differentiating bronchial asthma from obstructive emphysema with bronchiolitis. This differentiation must be made from the history and the course of the disease.

Vital Capacity

In recent years the time-honored and simple test of vital capacity has fallen into an undeserved disrepute as a test of pulmonary function. This change has come about principally because of the wave of enthusiasm for the more complex and exact tests devised by the pulmonary physiologists. It is true that if the vital capacity is determined by the office assistant and only the volume or the percentage of expected normal volume is reported to the physician, it is extremely limited in its value. There are many patients with a good total vital capacity who cannot walk across the street, and many with diminished vital capacity who are asymptomatic at moderate exertion.

The most valuable tests of pulmonary function are concerned with the assessment of ventilatory function. With few exceptions there is a close correlation between ventilatory function and the more complex and exact tests of function. The two elements which one needs to assess ventilatory function of the lungs are: usable ventilatory volume (vital capacity) and the ease with which the subject can ventilate this space. If either element is limited, the subject's effective pulmonary function is impaired. One can see from figure 1 that an expiratory air flow of 1,200 cc. per second can be accomplished by the normal subject without exertion of a positive pressure within the thorax. With the exertion of expiratory effort the normal person can attain a much greater rate of expiratory air flow. The increase in expiratory flow rate is proportional to the increase in intrathoracic pressure.

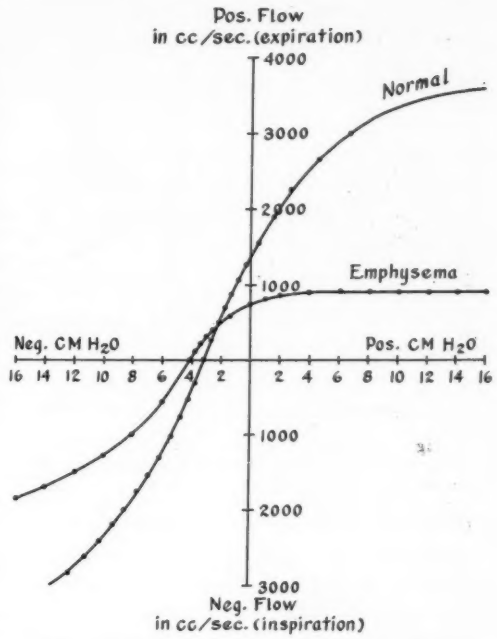

Fig. 1. — Comparison of the *velocity* of expiratory air flow in the normal subject and in a patient with severe pulmonary emphysema. Intrathoracic pressure is plotted on the horizontal axis. The normal subject can achieve greater rates of expiratory air flow with increased effort, while the patient with emphysema cannot.

The situation in the patient with partial bronchiolar obstruction to expiratory flow is strikingly different, as is shown by the curve for the emphysematous patient in figure 1. The patient with emphysema cannot accomplish a faster rate of expiratory air flow by increasing amounts of positive intrathoracic pressure. In a patient with less severe disease than the one illustrated, the pressure beyond which there is no increase in rate of expiratory flow would be somewhat higher, but a flattening of the portion of the curve to the right is characteristic of emphysema. The reason for this inability to increase the rate of expiratory flow with effort is related to the partial obstruction of the bronchioles and the fact that the bronchiolar walls are not supported. For this reason any pressure that is applied to

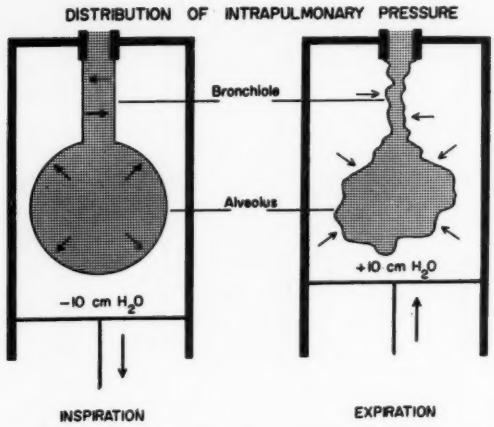

Fig. 2. — Mechanism of increasing expiratory resistance with exertion of expiratory effort in the emphysematous subject. The application of pressure to the alveoli exerts a like pressure on the collapsible bronchiole and thus further obstructs air flow.

the alveoli acts equally on the bronchioles and tends to collapse them. The degree of obstruction thus increases in proportion to the force applied and blocks an increase in expiratory rate of air flow. Figure 2 illustrates this phenomenon diagramatically.

When one observes the patient perform the vital capacity test and takes note also of the speed with which he expires the air, one can determine the ventilatory capacity of the lungs and also estimate the facility with which the patient can use the space. Only that portion which the subject can empty quickly is really useful to him under circumstances of exertion. In the presence of diffuse obstructive emphysema, bronchial asthma and airway obstruction, the speed of expiration is reduced. The total quantity of air expired may be reduced also, but it is often near normal even in the face of moderate impairment of the expiratory flow. In the presence of pulmonary fibrosis, rheumatoid spondylitis and congestive heart failure the total amount of the vital capacity is reduced but the speed of expiration is maintained. Thus a patient with a rather greatly reduced vital capacity which he can expel rapidly may have little dyspnea during moderate exercise, while a patient with a nearly normal vital capacity but slowly expelled may be dyspneic on light exercise.

There are various devices available for the determination of the vital capacity. One can use a BMR machine and obtain a written record of the effort, or one can obtain a water-filled vital capacity apparatus. All of these methods are somewhat cumbersome for the office or busy hospital ward. My practice has been to use the McKesson-Scott bellows vital capacity apparatus (fig. 3), which retails for about the same price as an aneroid sphygmomanometer. The use of disposable paper mouthpieces has also added to the convenience of the method. This instrument has no device to measure the air expelled in the first second, but I have found it satisfactory to record the total quantity expelled and then to make a note of the speed of expiration. Thus a normal healthy man might have a vital capacity of 4.5 liters rapidly expelled. I would record this as V.C. = 4.5 L (fast). A recording of 4.0 L (slow) would indicate a considerable slowing of expiration while the total capacity of the lungs showed little change. A value of 2.0 L (fast) would indicate a restriction of the expansion of the lungs or thorax but an airway free of obstruction. Such a patient might well have little dyspnea. A little experience quickly enables the physician to divide the speed of expiration into categories of fast, moderate, slow and very slow.

A refinement of this method is the use of the Gaensler-Collins timed vitalometer (fig. 4) for the measurement of the total amount of air expelled and that expelled in one, two, or three seconds. It is easy to see that it is only the air that a sub-

Fig. 3. — The McKesson-Scott vital capacity apparatus.* The metal case contains a rubber bellows.

*Available from McKesson Appliance Co., Toledo 10, Ohio.

Fig. 4. — The Gaensler-Collins timed vital capacity apparatus**

ject can expel in one second that would do him any good under conditions of exercise when the ventilation must be rapid to produce the necessary gas exchange. For this reason I record the volume expelled in one second and the total expelled. The one second volume approaches the total when no obstruction is present and constitutes a smaller fraction with increasing degrees of obstruction. A subject who has no expiratory obstruction should be able to expel at least 80 per cent of his total vital capacity in one second.

Exercise Tolerance (Walking-Talking Tolerance)

The exercise tolerance method has also been used for years as a rough test of functional capacity, but there has never been any clearcut end point. The method I use is to walk with the patient on level terrain and up at least one flight of stairs while I encourage the patient to talk. It is far more valuable to note his ability to talk continuously while walking than it is to examine him at the end of the course. Talking requires a slow, controlled expiration, regulated in accordance with the needs of the larynx and not by the rate of excretion of carbon dioxide or need for oxygen. For this reason the subject can maintain a conversation while walking only when he can comfortably excrete the carbon dioxide while breathing at a rate suitable for speech. When the excretion of carbon dioxide demands a more rapid and efficient form of respiration, talking is sacrificed. For this reason the examiner keeps the patient talking by directing the conversation to a subject in which the patient is likely to take the lead. The onset of dyspnea is indicated by the patient's talking in shorter phrases with quick expiration and inspiration between phrases and finally a reluctance to talk at all.

A stoic may deny dyspnea when he is asked about it and yet not be able to talk while walking. A psychoneurotic patient may complain bitterly of various symptoms while walking up several flights of stairs.

Finally one must evaluate the patient by considering all of the data obtained. The walking test obviously involves more factors than just pulmonary function but it is useful to see the patient perform. The portion of any dyspnea so elicited that is of pulmonary origin can usually be determined from a properly performed vital capacity test.

Summary

A rational approach to the evaluation of pulmonary function in the office or small hospital has been presented. Since there is such an excellent correlation between the complex tests of pulmonary function and ventilatory function of the lungs, one can take advantage of very simple tests of ventilation for this assessment. If this is coupled with a good history, physical examination and properly conducted exercise tolerance test, most practical problems of pulmonary function can be solved with only a minimum of inexpensive equipment.

University of Florida.

**Available from Warren E. Collins, Inc., 555 Huntington Ave., Boston 15, Mass.

The Surgical Treatment of Dyspnea Of Ventilatory Origin

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AND
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For the focus of this discussion, we have taken the symptom of dyspnea arising from depression of ventilatory function. Obviously, such disturbance may have many origins, and a study of surgical procedures applicable in its relief lies in danger of being somewhat a potpourri and may well suffer from superficiality. We have such fears for this presentation, but we are prompted to prepare it for a number of practical reasons.

Firstly, some of this material is relatively new and its presentation we believe is important. Secondly, the late stage at which the thought of application of other than the most conservative measures to some distressing ventilatory problems is considered indicates that the symptom of dyspnea should be subjected to earlier study for possible correctible mechanical factors as well as for the supplanting of some old and rather ineffective methods of therapy by more direct and effective treatment.

Pulmonary Emphysema

A distressing disease which is one of the greatest national health problems, pulmonary emphysema usually takes the form of a diffuse process throughout both lungs with the changes fairly uniform from region to region, with the exception of small bullae which may be scattered about throughout the lungs. When this bullous expression of the underlying problem becomes extremely advanced through tremendous distention, the term bullous emphysema is applied. These air sacs which may attain huge size present a particular therapeutic problem, but the diffuse process in the remainder of the lung must be kept in mind.

For this reason, the following measures are of basic importance and should be applied to all problems of this nature: (1) No smoking. No other point is so important in pure pulmonary emphysema. The patients cannot maintain adequate ventilation with a conducting bronchiolar system which is inflamed, swollen and choked with mucus and pus. Furthermore, they can ill afford to hasten the anatomic breakdown of pulmonary parenchyma through the uneven back pressures upon the pulmonary alveoli resulting from varying degrees of bronchiolar obstruction. It is truly distressing to realize how poorly stated are many physicians' instructions to stop smoking. With the reasons strongly put, success usually follows, at least in the instruction of men, and nothing can be more important for the sufferer from pulmonary emphysema. (2) Elimination of bronchitis from any other cause. (3) Breathing exercises, emphysema belts, expectorant medication and antibiotics, and intermittent positive pressure breathing using bronchodilator drugs are the purely medical technics that are invaluable.

Surgical Aids—Tracheostomy

Tracheostomy is an emergency measure of extreme value in patients with pulmonary emphysema when the balance has been upset by an accident, a bronchial infection or some other type of severe stress such as surgical operations. Tracheostomy provides a great reduction of dead space within the bronchial tree resulting in better diffusion and mixing of the respiratory gases. This device is of extreme importance when frequent aspiration of secretions is required, and it also facilitates the application of intermittent positive pressure breathing treatment through standard attachments or easily prepared substitutes.

Denervation Operations and Pleural Stripping Procedures

Unlike tracheostomy, which properly applied is well known to be life-saving, the procedures which aim at denervation of the lung and increase of its blood supply by pleural stripping have been advocated by a few surgeons. These measures, however, have attained little stature, and we think they are not worthy of clinical application.

Read before the Florida Medical Association, Eighty-Fourth Annual Meeting, Bal Harbour, May 13, 1958.

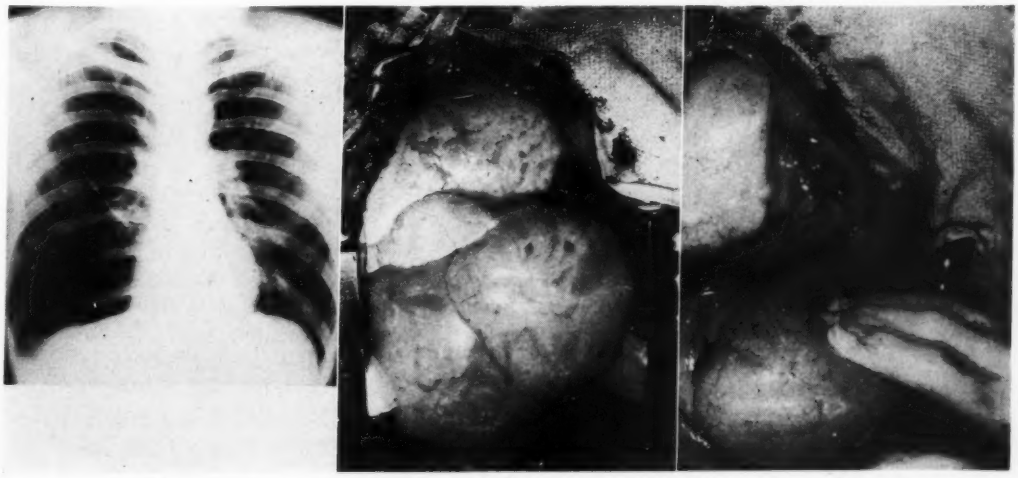
The Problem of Giant Bullae

The removal of giant bullae has as its object the release of collapsed and nonfunctioning lung tissue that has been displaced by these enormous tense sacs of air. Their removal may be obtained by simple excision of the bullae, or in the case of hopelessly involved lobes, by an appropriate lobectomy. It is of great importance that all possible functioning lung be spared, and the opportunity of improvement through the projected surgery must overbalance the pleural fibrosis, "tied up" diaphragms and similar adverse effects of thoracotomy which sometimes occur and tend to decrease ventilatory function. Selection of operative cases is therefore carefully undertaken.

The following points are of prime importance: (1) Large size of the bullae with severe compression and collapse of the adjacent lobes as seen by roentgen examination. (2) Dyspnea of a truly troublesome degree. This is almost invariably present, and episodes of unconsciousness on the slightest exertion or upon attempting to smoke are commonly reported in the history. (3) Chest pain. An inconsistent symptom, pain in the chest has been entirely absent in the history of many patients. At times, however, severe episodes of pain have occurred apparently as an expression of hyperinflation of the bullae which produced discomfort through pressure upon adjacent structures. In several cases pain in the epigastrium and anterior portions of the chest was originally interpreted as cardiac in origin, but subsequent eradication of the bullae and relief of symptoms have indicated a causal relationship. (4) Pulmonary function studies. Detailed pulmonary function evaluation is certainly an important part of the investigation of such patients and should be carried out before and after operation. In many cases presented in our series the patients were cared for prior to the availability of detailed studies of this type, but from our clinical experience we have become convinced of the value of these procedures and the improvement of ventilation following removal of such huge air sacs. It must be remembered, however, that long range results depend on the amount of good lung tissue restored to full function. It is our conviction that even an emphysematous lung performs better when released from a state of atelectatic compression (figs. 1a, b and c).

Technical Considerations

In our series of 20 cases, the procedures employed were about evenly divided between correction by lobectomy and correction through simple excision of bullae. The cardinal aim, as stated before, was elimination of the bulky air sac with preservation of any functioning lung tissue. Closure and repleuralization of raw lung surfaces



1a 1b 1c

Fig. 1a. — Posteroanterior roentgenogram demonstrating extensive localized bullous emphysema in the right lower lung field. Note hyperaeration at the right base with evidence of compression of the lung above this area.

Fig. 1b. — Same case as figure 1A., demonstrating findings at operation. An extensive bullous cyst arising in the medial segment of the middle lobe projects from the wound. The normal lateral segment of the middle lobe sits on the cyst like a cap, and the normal upper lobe is seen above it. There was compression atelectasis of part of the lower lobe.

Fig. 1c. — Showing the pedunculated nature of the bullous cyst and a portion of the compressed lower lobe behind it. The bullous cyst was easily excised with excellent re-expansion of the entire right lung.

were carried out to the fullest extent practicable. Postoperatively, through the use of multiple suction tubes and high volume, low pressure suction pumps, an expanded lung was obtained in each case.

Spontaneous Pneumothorax

A relatively common disturbance of ventilation, spontaneous pneumothorax results almost invariably from the rupture of a pleural bleb. It occurs in general in two distinct age groups.

The first group is that of the young and apparently healthy person from 20 to 30 years of age who has, as a rule, no other indication of ill health and whose roentgenogram of the chest, upon re-expansion of the lung, commonly exhibits no abnormality whatsoever. The second group is considerably older, and in these cases, the presence of diffuse and bullous emphysema is generally obvious. An asthmatic background is a contributing factor, apparently in both groups, and whereas the condition was formerly believed to be related to active pulmonary tuberculosis, it is now known that this relationship rarely exists.

The clinical characteristics are in general well known. There is commonly sharp pain in the chest followed by dyspnea and often by mild shock, a picture which is easily confused with angina, particularly in the older age group in which the inroads of emphysema have commonly reduced the intensity of breath sounds bilaterally to the point that physical evaluation may be misleading. Under these conditions, we know of several instances in which death was erroneously ascribed to acute coronary occlusion when exodus occurred too quickly for the obtaining of roentgenograms of the chest. In the younger age group, the condition may or may not be disabling, but despite the extent of the collapse or the apparent well-being of the patient, no physician should take the responsibility of allowing such a patient to work. Properly, he belongs in the hospital under supervision. Even under these circumstances, there is a hazard in the expectant treatment of spontaneous pneumothorax, particularly when severe collapse on one side is followed by pneumothorax on the opposite side, a phenomenon which may occur in about 5 per cent of cases.

The average period of disability can be drastically reduced by introduction of a rubber thoracotomy tube into the pleural space and employment of water seal drainage. The tube will allow the expulsion of air from the pleural space, but a word of warning is in order about violent and uncontrolled re-expansion. This results in great discomfort due to rapid mediastinal shift and bronchial irritation due to mechanical displacement as well as true pulmonary edema in both the expanding and intact lung. Such discomfort can be avoided by gradually allowing the lung to expand by intermittent release of a clamp on the water seal drainage system. This procedure invariably demands a half hour of close supervision, and it is our policy to keep the tip of the drainage tube under about 2 inches of water during the first 12 hours. Thereafter, it is elevated to a point just below the surface of the water seal.

What was formerly a startling development, but now has become the expected phenomenon, is the rapidity with which the leak within the lung becomes sealed. The sealing often takes place within an hour or so, but usually requires about three days. When the absence of a further leak is proved by clamping of the system and check-up by roentgenogram, the tube is removed, and the patient is discharged. A period of morbidity of two to three weeks or more is thus reduced to an average hospitalization period of three or four days, and the threat of fatal outcome through progressive tension pneumothorax or contralateral collapse is removed.

Recurrent pneumothorax is a problem that appears in about 10 per cent of those who have previously suffered from this condition. Among those with recurrences, there is a high proportion in whom the pneumothorax tends to recur repeatedly. In 16 such cases, after repeated and prolonged difficulties and in the presence of an active leak from the pleural surface, the chest has been opened and appropriate extirpative procedures carried out. As a rule, the procedure is limited to excision of the offending bulla, though on several occasions, gross abnormalities of the lung led to lobar resection. An interesting phenomenon observed at operation serves, in our opinion, as an explanation for the prompt cessation of air leaks when complete expansion of the lung is obtained through intubation. We have repeatedly noted that bullae which stand well above the surface as perfectly transparent blister-like extrusions, can be gently brushed flat upon the surface of the lung, where probably as a result of the interior surface tension they will remain flattened despite every effort of the anesthesiologist to reinflate them. It is our supposition that in the majority of cases following closed thoracotomy, expansion of the lung presses these bullae flat

against the parietal pleura producing a temporary seal that is followed by healing.

Staphylococcus Pneumonia With Aerocele Pneumothorax and Empyema

It has been an interesting experience during the last four or five years to see the emergence of "hot" strains of medically educated drug-resistant staphylococci and the reappearance of a serious disease in the form of staphylococcus infection in the newborn. One of us (J.G.C.) remembers as an intern removing the thoracotomy tube from the first infant to survive after staphylococcus pneumonia and empyema at St. Luke's Hospital in New York City. Sulfathiazole was the drug employed in that case, and from then until the last five years, the problem of staphylococcus pneumonia was of no serious importance. The present strain, however, resistant to penicillin and numerous other valuable antibiotics, has produced an epidemic of staphylococcus pneumonia, and the interesting complications that may result from such infection belong in this discussion. The lesion in staphylococcus pneumonia consists of multicentric tiny abscesses with great necrotizing power. The process should be suspected immediately in acutely ill infants. Tremendous gaseous distention of the gastrointestinal tract is often the first sign, although careful examination may reveal pyoderma. Some form of staphylococcus infection in the mother is equally frequent.

The suspicion must not be allayed by an initial roentgenogram of the chest giving negative evidence, for the radiologic findings may not appear for another day or so, and repeating the study is mandatory. It is the policy at Variety Children's Hospital in Miami, where a considerable experience in this condition has been amassed, to supplement blood cultures with direct needling of the pneumonic lesion to attain culture and sensitivity studies as quickly as possible. If pneumothorax is produced, it is treated promptly by routine intubation.

The serious ventilatory disturbances that occur in this condition result from erosion of bronchiolar walls by staphylococcal abscesses with resulting escape of air from the bronchial system into the peribronchial tissues. These cystlike collections of peribronchial air are known as aeroceles. They may be multiple and may attain tremendous size, or, if located subpleurally, may promptly rupture into the pleural space producing pneumothorax and commonly an associated empyema.

The treatment of aeroceles is generally expectant although in isolated cases they become inflated to the point where two stage tube drainage is required to relieve compression of the remaining lung. Pneumothorax, of course, demands immediate water seal tube drainage, and to lessen the hazard of intermittent tube blockage through serum plugs we have often found it advisable to treat pneumothorax in these cases with two thoracotomy tubes. Lastly, the not infrequent empyema that occurs is treated by intubation and irrigation with small amounts of streptokinase-streptodornase solution with release of the clamp after one and one-half hours. This short period has proved to be satisfactory in that enzyme activity seems adequate and the high febrile reactions and apparent discomfort are avoided.

Chest Trauma

The frightfully mangled chest resulting from the present age of high speed air and surface travel and heavy industry is not an unusual condition, and although great strides have been made in the treatment of these injuries, much more can be done in nearly every community. Physiologists, thoracic surgeons and anesthesiologists have produced well defined and effective technics during the last 15 years which have greatly reduced the mortality when energetically applied. The objectives of initial treatment are so important that no priority should be given; all measures must be carried out simultaneously for ideal therapy. These objectives are: (1) An empty pleural space through thoracentesis in the case of blood or tube drainage in cases of associated pneumothorax. (2) A clear airway, in severe cases requiring tracheal intubation followed by tracheostomy. Blood and mucus may then be aspirated repeatedly and an insufflation machine may then be applied in cases of flail chest. (3) Shock is treated with blood, plasma, or plasma expanders. (4) The wall of the chest must be rendered an effective unit through skin or skeletal traction by pins, towel clips or whatever immediate method is available in cases of flail chest.

External measures of this nature, however, fall far short of the efficiency attained by hyperventilation and controlled positive pressure insufflation as administered by the recently developed Morch insufflator. This machine consists of a piston pump operating at a definite but controllable rate and stroke volume which produces positive pressure through a tracheostomy to expand the lungs and thoracic cage gently and then

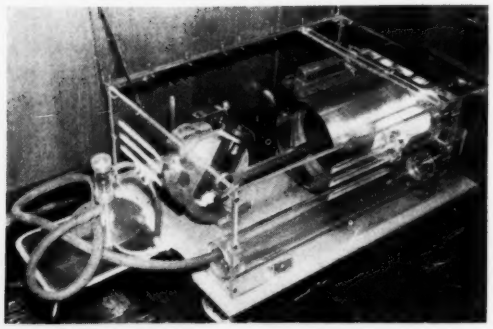


Fig. 2. — The Morch piston respirator.

allows, through an escape valve, a gentle return to essentially atmospheric pressure. Respiratory alkalosis and apnea are quickly produced, whereupon the painful muscular activity of respiration is eliminated. It is this muscular activity which produces rib overriding and, particularly in the region of the diaphragm, a severe paradox of the lower portion of the chest. Bronchial toilet is facilitated by the tracheostomy, and it is to be noted that a simple uncuffed but specially designed tracheostomy tube is used. This apparatus has been in continuous use on patients with poliomyelitis for over five months and was used over one month in one of the early patients whose chest had been pulverized as he was rolled through an 8 inch space between a locomotive and a building (fig. 2).

Funnel Chest Deformity

Funnel chest, though commonly held to be only an unsightly deformity, can, in serious cases, produce a considerable degree of functional disability directly and indirectly affecting the respiratory reserve.

This condition is characterized by general flattening of the thorax with a deep and very noticeable depression of the lower portion of the sternum. The heart is shifted to the left for lack of room anterior to the spine, and palpitation is an occasional symptom. There is usually paradoxical movement of the lower wall of the chest, which falls inward due to diaphragmatic contraction on inspiration, the same region expanding on expiration to depress directly pulmonary ventilation and impair effectiveness of cough. It is probably due to this facet of the problem that the patients seem subject to more than their share of respiratory infection and chronic bronchitis. In addition, it is commonly overlooked that the patients exhibit an immobile upper portion of the sternum which fails to lift on inspiration as should occur for proper expansion and ventilation.

Great improvement or complete correction can be obtained with a properly carried out surgical procedure. This entails total excision of the deformed portion of the costal cartilages, elevation of the sternum through an osteotomy at its upper portion and thorough lysis of its posterior attachments followed by fixation in a sharply overcorrected position that can only be maintained by an external bridge and skeletal traction applied to the sternum. The perichondrium of the resected cartilages should be left in place. Lesser procedures do not and cannot give optimum results and, while meeting these requirements demands an extensive procedure, it is a safe one under good conditions and wholly worth while.

Summary

In summary, we apologize for selecting from a host of conditions that might fit our title a series of problems that interests us and, we hope, others too, more keenly. Diaphragmatic hernias in the newborn should have been discussed in detail, but we thought that the demand for immediate correction in the neonatal period is well known. Eventration of the diaphragm, a congenital laxness of this structure in which it bulges to the apex of the chest and which is capable of amelioration by reefing of the diaphragm at open thoracotomy, is another interesting though rare condition, but time prevents paying due heed. Lastly, solid masses of all description were excluded for the same reason. The purpose of this presentation will have been achieved if the detection of dyspnea prompts further investigation in the suspicion that it may be correctible by some of the mechanical means described.

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Dissecting Aneurysm of the Aorta A Surgical Disorder

Nelson H. Kraeft, M.D.
TALLAHASSEE

The clinical recognition of dissecting aneurysm of the aorta now affords the physician far more than personal pride in astute diagnosis. The demonstration by DeBakey and Cooley of the feasibility of surgical treatment for this vascular catastrophy provides a potential path to recovery for the afflicted patient. Reports of only a few cases in which the patient was successfully treated for acute dissecting aneurysm of the thoracic aorta have appeared in the literature, beginning in 1955.[1] The clinical summary of a recent case is presented.

Report of Case

A 58 year old white delivery truck driver noted a transitory twinge of pain in the left posterior portion of the chest while loading clothing for delivery on March 29, 1958. One half hour later while he was seated at breakfast, sudden severe pain developed in the left side of the chest medial to the scapula. He was hopitalized at Jackson County Hospital in Marianna.

Opiates only partially relieved the pain, which did not move or radiate. It was described as a feeling of something "spreading" inside the chest. Physical examination was unrevealing except for mild hypertension. A roentgenogram of the chest (fig. 1) appeared to be normal. Electrocardiograms made on the day of admission and two days later indicated a pattern consistent with left ventricular hypertrophy with no appreciable change in the interval. Roentgenographic study of the gallbladder gave evidence of no abnormality. The pain gradually diminished in intensity, but never completely subsided despite the use of various analgesics.

The patient was discharged on the sixth hospital day to rest at home. After six days at home he again experienced severe pain in the same location. Roentgenograms of the chest (figs. 2 and 3) now demonstrated increase in width of the descending thoracic aorta, and the diagnosis of dissecting aneurysm was made by Dr. Courtland D. Whitaker.

The patient was transferred to Tallahassee Memorial Hospital on April 12. His past history was of interest in that he had been treated for hypertensive vascular disease at intervals for several years. In 1956 a diseased and nonfunctioning right kidney was removed. His blood pressure thereafter dropped to normal limits for a time, only to return gradually to the previous mild hypertensive levels for which Raudixin was administered by his physician.

On transfer, he was in mild discomfort with the pain still localized in the left posterior portion of the chest medial to the scapula. Good pulsations were felt bilaterally in the carotid, radial, and femoral vessels. The blood pressure was 170/90 in each arm. Breath sounds were diminished over the left lower portion of the chest. The pulse rate was 62 per minute, and the cardiac rhythm was regular. A soft systolic murmur was heard at the base of the heart. The heart did not appear to be enlarged. The abdomen was soft and nontender. The scar in the right flank was well healed without evidence of hernia. The other physical findings were unremarkable as were the routine blood and urine studies. A roentgenogram of the chest (fig. 4) revealed widening of the descending thoracic aorta, elevation of the diaphragm on the left side, and a small amount of fluid in the left pleural space. Fluoroscopy revealed paradoxical motion of the elevated diaphragm. Pulsations were not noted in the dilated aorta.

Exploration of the left side of the chest was undertaken on the evening of transfer. About 300 cc. of serosanguineous fluid was aspirated from the pleural space. An intense inflammatory reaction was found about the aorta, which was enlarged to twice its normal size beginning in the distal arch and extending to a point about 3 inches above the diaphragm. The aorta was mobilized, and two pairs of intercostal vessels were divided. During this portion of the procedure the systolic blood pressure remained at about 130 mm. Hg. Noncrushing clamps were used to occlude the aorta distal to the left subclavian artery and distal to the visibly dilated portion above the diaphragm. The aorta was opened transversely for about three fourths of its circumference, and clotted blood was removed from the dissected area by milking and aspiration. The layers of the aortic wall remained intact only in the posterior one fourth of the vessel's circumference. The distal dissected intima and media were sutured to the media and adventitia, obliterating the dissection and forming a single distal lumen. A wedge

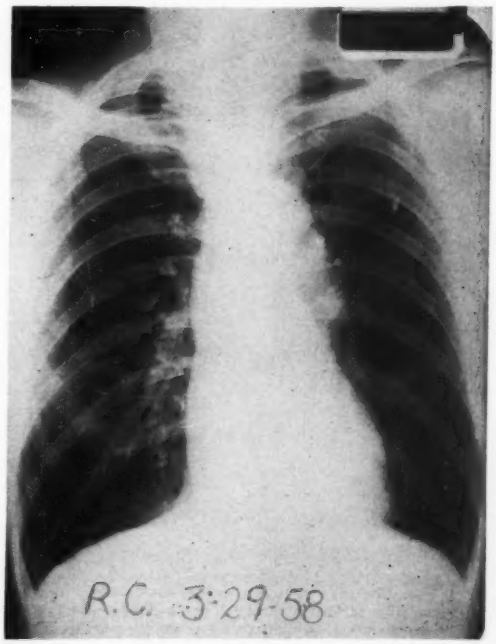
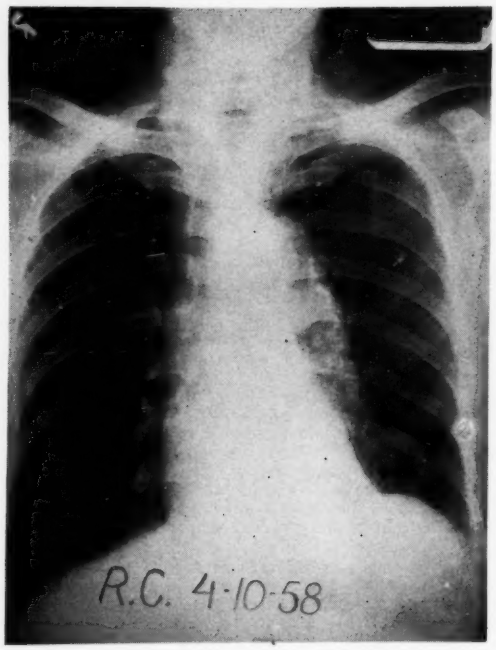
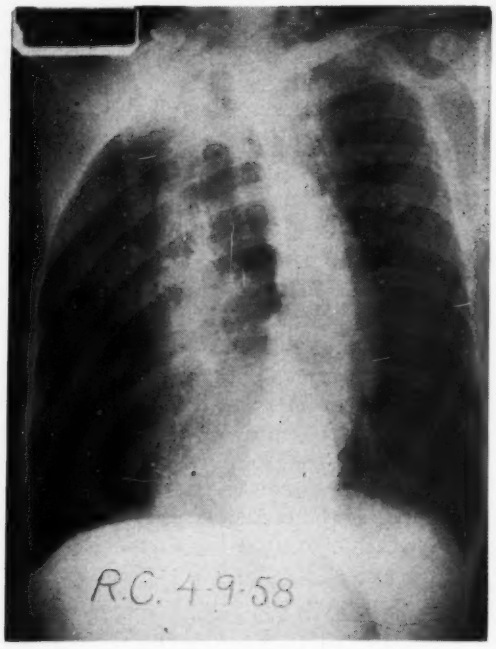


Fig. 1. — Posteroanterior roentgenogram made on admission to Jackson County Hospital shortly after the onset of the illness.





Figs. 2. and 3. — Posteroanterior and left anterior oblique roentgenograms made on readmission demonstrating enlargement of the supracardiac shadow and descending aorta and elevation of the diaphragm on the left side.

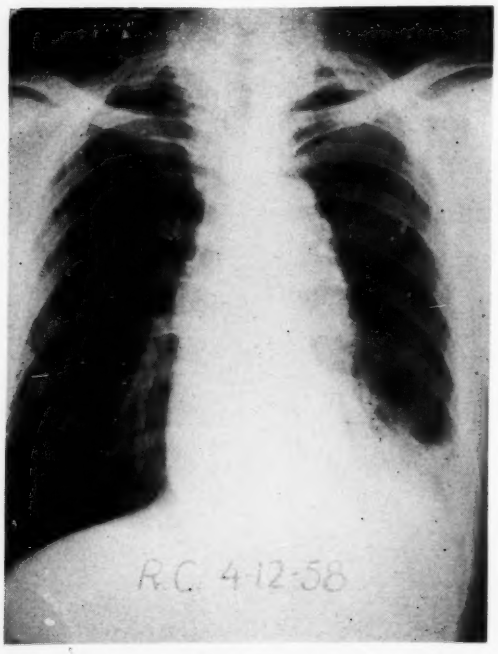


Fig. 4. — Posteroanterior roentgenogram made on transfer demonstrating further enlargement of the aorta and the presence of intrapleural fluid and elevation of the diaphragm on the left side.

of the proximal dissected intima and media was excised, and the opening in the aorta was then closed with a simple continuous suture forming an end to end anastomosis (fig. 5).

The clamps were removed, allowing resumption of distal circulation after a period of complete occlusion of 26 minutes. The blood pressure, which had dropped to 130/90 with anesthetization, rose to 240/110 during the period of occlusion and dropped to 110/80 with removal of the clamps. A sheet of Dacron cloth 4 inches wide was wrapped about the area of the anastomosis and stitched in place. The dissection did not involve the aortic arch in the area of the phrenic nerve, and no cause for the paradoxical motion of the diaphragm was found other than the pleural effusion. Good pulsations were palpable in both feet immediately after operation. During the first 24 hours pulsations in the left foot disappeared, but thereafter pulsations in the lower extremities were equal and normal. Urinary output was adequate. The blood pressure gradually rose to 170/90 in each arm, where it remained at the time the patient was discharged from the hospital on April 22. The pain experienced preoperatively did not recur.

During subsequent examinations the blood pressure was found to increase gradually to 240/110 despite administration of Raudixin. Addition of Ansolysen and Diuril resulted in the return of pressures to the preoperative levels. Roentgenograms of the chest (figs. 6 and 7), made on May 5, revealed some increase in the size of the aorta as compared with the preoperative roentgenograms but no change from that noted on the first postoperative roentgenogram. It is thought that a part of this increase may be due to coagulum about the Dacron splint. Subsequent fluoroscopic examination has revealed no change in the appearance of the aorta. The diaphragm on the left side is sluggish in motion, but is no longer paradoxical.

Discussion

The mortality rate in cases of untreated dissecting aneurysm has ranged from 75 to 90 per cent.[1] Death occurs rapidly in the majority of instances due to perforation into the pericardium, mediastinum, pleura or peritoneal cavity. Experiences with subacute forms of the disease,[1] observation of the infrequent cases of so-called healed or chronic dissecting aneurysm in which the dissection re-enters the true lumen, and reports of the surgical treatment of dissecting aneurysm in the abdomen[2-4] suggested an effective surgical approach to the acute aneurysm. With means of treatment at hand, prompt clinical diagnosis has become imperative if the patient is to survive.

Although the disease is more commonly seen after the age of 50, its occurrence below the age of 40 is not unusual.[5] It occurs twice as often in men as in women. In a group of women patients under the age of 40 the dissection apparently began during pregnancy or in the early postpartum weeks in about half of the cases.

Diagnosis

The characteristic sudden onset of very severe pain in the chest or abdomen of a patient with hypertension should suggest the consideration of dissecting aneurysm in the differential diagnosis. Myocardial infarction and an intra-abdominal accident are the most common conditions to be differentiated from dissecting aneurysm. The pain is often so severe as to be unrelieved by narcotics and is sometimes described as a tearing, bursting or spreading sensation. Progressive radiation of the pain from the anterior portion of the chest to the head and neck, to the back of the chest, along the ribs, to the abdomen, and into the lower extremities, when this occurs, is almost pathognomonic and indicates the progression of the dissection.

The physical findings will depend on the location and extent of the dissection. There may

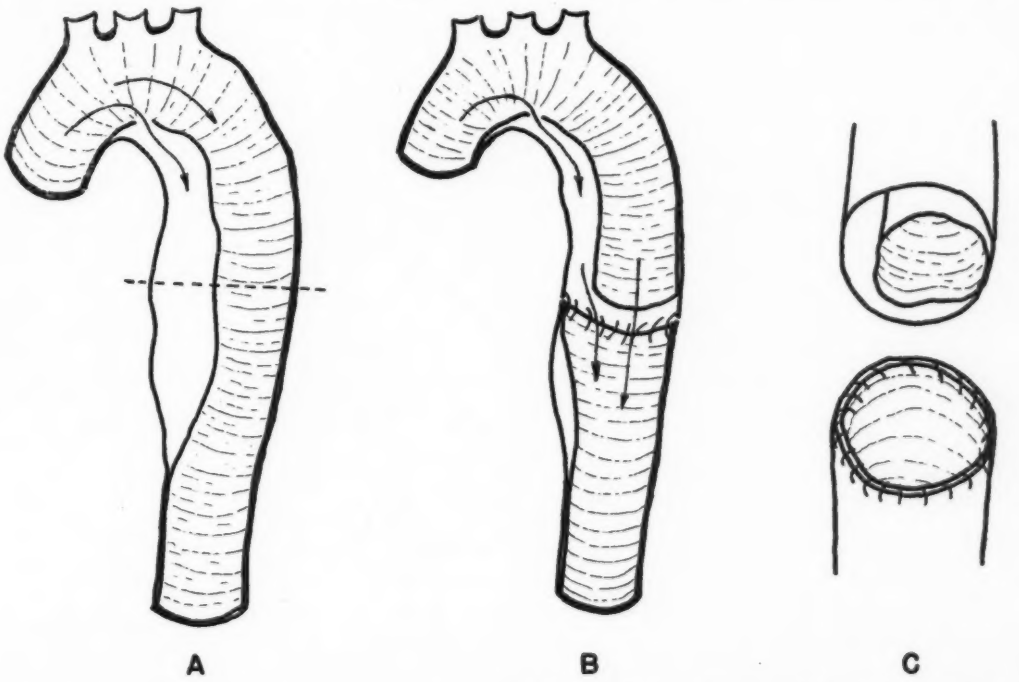
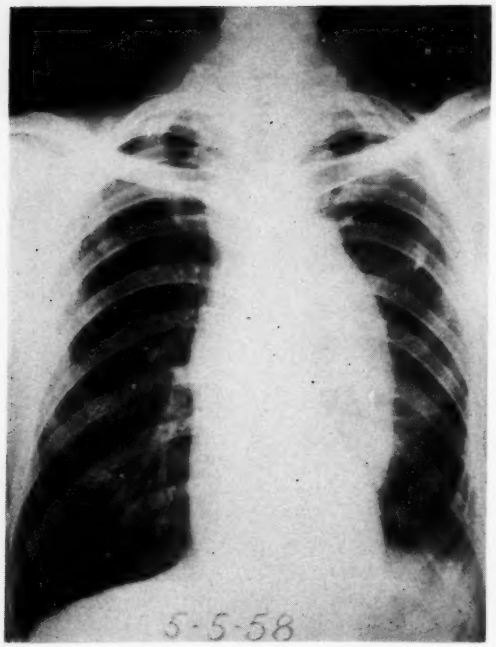
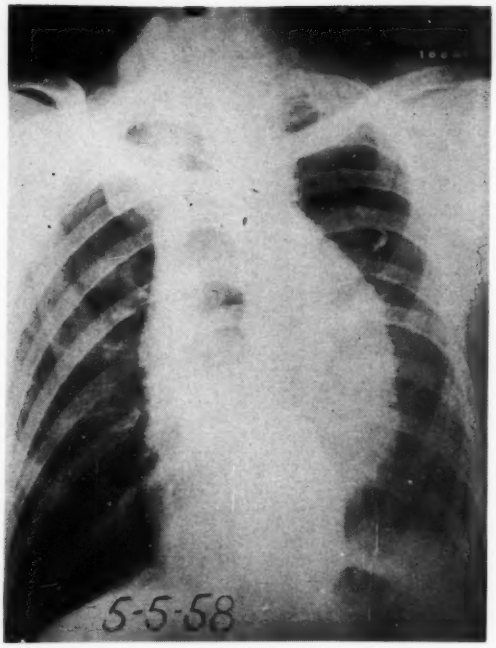


Fig. 5. — A. Diagrammatic representation of a saggital section of the aorta indicating the formation of a dissecting aneurysm along the inner curve of the arch and down the thoracic aorta. The level of the incision in the aorta is indicated approximately by the dotted line. B. Saggital section through the aorta following suture of the distal dissection to the periphery of the vessel, excision of a portion of the proximal dissected intima-media layer and closure of the aortotomy. Re-entry of blood from the dissected area proximally into the single distal lumen is indicated by arrows. C. Diagrammatic representation of the appearance of the proximal and distal aortic walls before closure of the aortotomy, shown completely divided for purposes of illustration.





Figs. 6. and 7 — Posteroanterior and left anterior oblique roentgenograms made on the twenty-third postoperative day. The aorta appears to be larger than it was preoperatively, but this increase may be due partly to the operative mobilization of the vessel and partly to the Dacron cloth splint encircling the area of anastomosis.

be no demonstrable abnormality whatever. Involvement of the branches of the aortic arch can result in neurologic manifestations such as stupor, unconsciousness, hemiplegia or paraplegia.[6] Inequality of the pulsations in the carotid or radial vessels and dissimilar blood pressure levels in the upper extremities indicate partial obstruction of these vessels by the dissection. Extension of the dissection to the iliac vessels results in absent or disparate femoral pulses, as may also occur should the dissected intima occlude the aortic lumen at a higher level. A diastolic murmur at the base of the heart, particularly as a new finding in a previously examined patient, is said to be suggestive evidence.[7] Collections of pericardial or pleural fluid or blood will produce characteristic physical changes if sufficient in amount. Abdominal tenderness and changes in the normal sounds of peristalsis may occur.

Roentgen examination of the chest is particularly helpful in supporting the diagnosis[1] and most commonly demonstrates widening of the supracardiac shadow. Oblique views are helpful in localizing the area of aortic widening. Serial roentgenograms demonstrating progressive enlargement of the aorta afford confirmatory evidence, especially when previous normal roentgenograms are available for comparison.

Electrocardiography may be of value mainly in a negative sense. A completely normal tracing is unusual in the patient with aneurysm. The pattern of left venticular strain is most commonly present.[7] When serial electrocardiograms do not reveal the characteristic patterns of myocardial infarction in a patient whose symptoms are indicative of this disease, the diagnosis of dissecting aneurysm should be considered. In contrast, the finding of electrocardiographic evidence of coronary occlusion does not exclude the possibility of dissecting aneurysm since the dissection at times involves the coronary ostia.

Other laboratory findings of some help include the demonstration of blood in the urine, anemia, and elevation of the serum nonprotein nitrogen level.[7]

As is true in many other diseases, the diagnosis is most likely to be made when the possibility of dissecting aneurysm is actively considered and a search is made for supporting evidence.

Treatment

The principle of fenestration of the internal wall of a dissecting aneurysm was first used by

Gurin, Bulmer and Derby[2] in 1935 in treating a patient whose dissection extended into an iliac artery. Johns[3] closed a ruptured dissecting aneurysm of the abdominal aorta by direct suture in 1953. Shaw[4] described the treatment of a patient in 1955 in whom fenestration of the internal wall of the dissection was performed in the abdomen. He also closed the distal plane of the dissection with sutures. Unfortunately, all three of these early efforts ended in early postoperative death of the patient.

The surgical treatment of the dissecting aneurysm of the thoracic aorta was first described by DeBakey, Cooley and Creech[1] in 1955 when the various technics used in treating six cases were outlined. In three of these cases the duration of the dissection was one month or less, and two of the patients died. Swann and Bradsher[8] and Gilman and Bailey[9] reported single cases of patients successfully treated by fenestration of the aneurysm in the chest. Warren, Beckwith and Muller[10] reported recovery of one patient in a series of five treated surgically. DeBakey, Cooley, Crawford and Morris[11] recently reported the results of the surgical treatment of 34 patients with dissecting aneurysm. They noted a 28 per cent mortality rate in this group which included chronic (more than one month duration) as well as the more acute aneurysms. Various forms of treatment including excision and prosthetic or homograft replacement as well as fenestration were used depending on the location and extent of the dissection.

The feasibility of surgical attack on this entity is thus well established. The mortality rate will probably continue to be high for the operation, but this is more a manifestation of the pathologic nature of the disorder rather than a result of the magnitude of the operation. It has been advocated that vasodepressor and vasopressor drugs be used respectively to reduce the hypertension resulting from occluding the aorta and to prevent the hypotension which follows the release of the occluding clamps.[1,10] Their use would appear to be more important when prolonged periods of occlusion are anticipated. These drugs were not used in the case reported here since the range of pressures was not thought dangerous. The use of by-pass shunts and controlled extracorporeal circulation appear to be more effective, if technically more difficult, methods of blood pressure and circulatory control.[12]

Another disturbing feature in the patient with dissecting aneurysm is a greater tendency for spinal cord damage to develop than is observed in the patient with a fusiform aneurysm. Hypothermia has been advocated to diminish this complication of treatment.[1] Efforts should be made to control hypertension postoperatively since even though the dissection has been stopped by return of the blood stream to the true lumen, the aortic wall remains weak and external rupture may occur. Replacement of the affected area by homograft or plastic prosthesis therefore seems preferable to fenestration.

The technics of these procedures have been clearly described and illustrated in the recent literature by DeBakey and Cooley. It has been pointed out, however, that "because of the pathological nature of the lesion, excisional therapy, which has proved highly effective in sacciform and fusiform aneurysms, is usually not feasible."[13] Although the technic of fenestration is not curative, in the favorable case it will satisfy the four general aims of the surgical treatment of this disorder, as outlined by Warren, Beckwith and Muller.[10] These are (1) prevention of distal extension of the aneurysm, (2) creation of a distal re-entry site for the aneurysmal sac, (3) prevention and/or relief of arterial obstruction, and (4) control of hemorrhage from the aneurysm when present.

Summary

Effective methods for the surgical treatment of dissecting aortic aneurysm are now available.

The clinical diagnosis need not be difficult provided the possibility of the disease is kept in mind and provided the commonly available diagnostic aids are used.

The relatively simple procedure of fenestration can satisfy the aims of the surgical treatment of this disorder.

One case is reported in which the diagnosis was established on the basis of meager but important evidence and in which recovery followed prompt surgical treatment.

Appreciation is expressed to Dr. Courtland D. Whitaker of Marianna for the referral of this patient and to Dr. Frederick B. Thigpen of Tallahassee, who gave important help in preoperative consultation and in the postoperative treatment.

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The Tumor Registry in a Teaching Hospital

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MIAMI

A tumor registry is a continuous audit of a group of patients from a given source who have malignant tumors. Such an audit may be carried out in a form dictated by the local need, but essentially it lists all patients with cancer and records their status at stated, usually yearly, intervals. Hospital tumor registries are now a well established fashion and are likely to remain so since they serve a definite need. This fact is attested to by the support offered them by the American College of Surgeons. The purpose of registration has been outlined by this same group.[1]

An outgrowth of individual registries has been the central registry where abstracts from two or more sources are funneled to a central agency. The general trend is in the direction of central registries, but as yet there has been no official sanction from the American College of Surgeons.[2] In this area, the American Cancer Society, with the cooperation of the Florida State Board of Health, has been interested in forming a central registry for Dade County. To this end they have arranged for hospitals to use uniform abstract forms (figs. 1 and 2), carbon copies of which are to be forwarded to the central agency. In an effort to cooperate with the central registry being developed, Jackson Memorial Hospital is using the recommended forms. These, however, are not adequate for the purposes of this particular registry. The forms are indexed, but even so become unwieldy because over 100 patients are registered each month.

It is believed that the tumor registry at a teaching institution such as Jackson Memorial Hospital should:

1. Give statistical information about the magnitude of the cancer problem in relation to other admissions.
2. Provide information about what types of tumors are commonly seen in this hospital.
3. Form a continuous audit that compares the results of treatment in this hospital from year to year and allows for comparison with published figures from other sources. Only by such an audit can results of treatment be assessed and improved upon.
4. Provide a ready source of information for medical students, house staff and attending physicians who wish to make clinical investigations.
5. Be a source of material for teams interested in clinical investigation such as the chemotherapy study now under way in the Department of Medicine.

In an effort to develop a registry which would fulfil all the purposes outlined and make information readily available, many hospitals and central registries were contacted. No single registry or combination of registries could be adapted to supply the information thought to be necessary for Jackson Memorial Hospital. With the volume and types of tumors to be registered, it was obvious that there should be a mechanical method of sorting information for ready use. Two methods presented promise. The first was the McBee Keysort cards.* This method has the virtue of sim-

From the Department of Surgery of the University of Miami School of Medicine and Jackson Memorial Hospital, Miami.

Read before the Florida Health Officers' Society, Bal Harbour, May 11, 1958.

* McBee Corp., The Date Processing Division, Port Chester, N. Y.

Name | 14 | 15 | 16 | 17 | 18 | 19 | 20 | REF. | JAN. FEB. MAR. | APR. MAY JUNE | JULY AUG. SEPT. | OCT. NOV. DEC.

Street Address | City | State | Reg. No.:

Name of Husband (if married woman) | Date of Admission: | Date of Discharge: | Hospital:

Age | Sex | Race | Marital Status | Private ☐ Semi-Private ☐ | Ward ☐ Clinic ☐ | Hospital No.:

DIAGNOSIS

FINAL DIAGNOSIS
(Specify primary site of cancer)

Basis of Diagnosis:
Autopsy ☐ Histology ☐ X-ray ☐ Clinical Only ☐ Other (Specify) ☐

Histological Diagnosis: (Pathology Report): Grade

Date of Diagnosis | Exfoliative Cytology

Stage of Disease: Localized ☐ Regional Involvement ☐ Remote Metastasis ☐

HISTORY

Was case positively diagnosed as cancer before this admission?
No ☐ Yes ☐ If Yes, Date:

Has patient been previously treated for this cancer? No ☐ Yes ☐
If "yes" specify date, type of treatment, and doctor or hospital
Date: Treatment:

TREATMENT

Type: Surgery ☐ Radiation ☐ None ☐ Unknown ☐
Patient Refuses Treatment ☐ Other ☐

Purpose: Curative ☐ Palliative ☐ Diagnosis Only ☐ Unknown ☐

Date and Type of Treatment:

CONDITION

Condition at Discharge: Alive ☐ Dead ☐

If Dead, Date of Death:

If Alive: No Clinical Evidence of Cancer ☐ Not free of Cancer ☐ Unknown ☐

FOLLOW-UP

Name and address of hospital or physician responsible for follow-up:

Name of person submitting this report: Date.

CANCER REGISTRY
ABSTRACT FORM

Medical Case History Bureau, 17 West 60th St., New York City — Form No. ACS 2 — U. S. Patent No. 1,771,740 Other Patents Pending

Fig. 1. — Form for original registration recommended by the Dade County Unit of the American Cancer Society and used at Jackson Memorial Hospital in cooperation with the local central registry.

FOLLOW-UP INFORMATION

DATE	Survival Time Months	Source of Contact	Alive	No Evidence of Cancer	Evidence of Cancer	Local Recurrence	Metastasis	Status Unknown	Dead	SUBSEQUENT TREATMENT OR REMARKS

CAUSE OF DEATH AUTOPSY: Yes ☐ No ☐

Fig. 2. — Reverse side of figure 1. Records follow-up information. (Figures 1 and 2 are reproduced with the permission of the Medical Case History Bureau).

WORK SHEET — ORIGINAL — TUMOR REGISTRY

University of Miami School of Medicine and Jackson Memorial Hospital

Name ..... Hospital # ..... Age .....

Month registered (circle one)

January March May July September November
February April June August October December

Sex and race (circle one)

White male Colored male Other male Male race unknown Sex and race
White female Colored female Other female Female race unknown unknown

Marital status (circle one)

Single Divorced Widow Other
Married Separated Widower Unknown

Type of patient at time of registration
Doctors name, if private patient .....

Private inpatient
Private outpatient
Staff inpatient
Other

Staff outpatient
Staff inpatient and outpatient
Staff inpatient and tumor clinic patient
Staff outpatient and tumor clinic patient
Staff in- and out-patient and tumor clinic patient

Primary site of tumor .....

Histology of tumor (specify differentiation) .....

Metastases (circle one)

None Regional only (primary nodes) Remote only Regional and remote

Date first diagnosed as cancer .....

Method of diagnosis (circle one)

Clinical only X-ray only Histology Clinical and X-ray Other
X-ray and histology Cytology and clinical Cytology only Unknown

Initial treatment (circle one)

Surgery alone X-ray alone Hormone alone Chemotherapy alone None
Surgery and X-ray X-ray and chemotherapy Surgery and hormone Unknown
Other combination

Aim of initial therapy (circle one)

Cure Palliation Exploration only Biopsy only
Control of primary only No therapy Unknown

Condition of patient at conclusion of initial therapy (circle one)

Living without cancer Living with cancer Living status of cancer unknown
Dead of cancer Dead of other causes with cancer Dead of other causes without cancer
Dead status of cancer not known Lost to follow-up Unknown

Number of primary cancers (circle one)

1st 2nd 3rd 4th 5th 6th 7th 8th or more 9 unknown

Autopsy (circle one)

Does not apply Dead no autopsy Dead autopsy this hospital
Dead autopsy elsewhere Dead autopsy not known Unknown

Fig. 3. — Work sheet used at the time of initial registration lists the desired information.

CODE SHEET - ORIGINAL - TUMOR REGISTRY
University of Miami School of Medicine and Jackson Memorial Hospital

SUBJECT	SPACE NUMBERS	SPACES
Hospital number	1 - 6	
Age	7 - 8	
Month registered	9	
Sex and race	10	
Marital status	11	
Type of patient	12	
Primary site of tumor	13-14-15-16	
Histology of tumor	17-18-19	
Metastases	20	
Date first diagnosed as cancer	21-22-23-24	
Method of diagnosis	25	
Initial treatment	26	
Aim of initial treatment	27	
Condition of patient at conclusion of initial therapy	28	
Number of primary cancers	29	
Autopsy	30	

Fig. 4. — Code sheet from which information is transferred to the IBM card. An instruction sheet tells a clerk how to convert the information from figure 3 to this code sheet.

plicity, is inexpensive and allows sorting of limited combinations of information. A disadvantage is that the cards must be sorted manually. This method could well be adapted to smaller registries. The second was the use of a machine such as one produced by the International Business Machine Corporation.** The chief disadvantage here is the expense involved, but such a method allows for mechanical sorting and tabulation of many combinations of information. Because of the cooperation offered by the IBM Department of the University of Miami, this method of keeping a registry became available.

It was initially decided that tumors and not patients would be registered. Thus if a patient had three primary malignant tumors, all three tumors would be registered. Figure 3 summarizes the information that it is believed desirable to record at the time of registration. This forms a work sheet from which a clerk, using a simple instruction manual, may transcribe information to the International Business Machine (IBM) code sheet (fig. 4). The usual statistical information is recorded. The hospital number is the only means of identifying the case once it has been transferred to the IBM punch card. The month registered is of value chiefly for annual follow-up information. Thus it is possible to call for a list of chart numbers that were registered during a given period one year previously and these represent the cases that require annual follow-up. The primary site of the tumor is recorded according to the International Classification of Diseases,[3] and the exact histology of the tumor is listed according to The Manual of Tumor Nomenclature and Coding.[4] This arrangement is especially valuable for anyone wishing information

**International Business Machine Corp., 590 Madison Ave., New York, N. Y.

WORK SHEET — FOLLOW UP — TUMOR REGISTRY
University of Miami School of Medicine and Jackson Memorial Hospital
Annual Follow-up

NAME HOSPITAL #

First Annual Follow-up

Condition of patient (circle one)
Living without cancer — Living with cancer — Living status of cancer not known
Dead of cancer — Dead of other cause with cancer — Dead status of cancer not known
Dead of other cause without cancer — Lost to follow-up — Unknown

Treatment since initial therapy (circle one)
Surgery alone — X-ray alone — Hormone alone — Chemotherapy alone — Lost to follow-up
Surgery and x-ray — X-ray and chemotherapy — Other combination — None — Unknown

Recurrence (circle one)
Local recurrence — Local recurrence and regional metastases — Regional metastases
Remote metastases — Local recurrence, regional and remote metastases
Regional and remote metastases — Local recurrence and remote metastases
No recurrence or metastases — Unknown — Lost to follow-up

Method of diagnosing recurrence (circle one) — No recurrence — Clinical only
X-ray only — Histology — Clinical and x-ray — Lost to follow-up
X-ray and histology — Cytology and clinical — Cytology only — Unknown

Aim of therapy for this recurrence (circle one)
Cure — Palliation — Exploration only — Biopsy only — No recurrence
Control of primary only — No therapy — Unknown — Lost to follow-up

Development of another primary (circle one) — No more primary — 2nd — 3rd — 4th — 5th
6th — 7th — 8th and/or more — unknown — Lost to follow-up

Autopsy (circle one)
Does not apply (patient living) — Dead no autopsy — Dead autopsy this hospital
Dead autopsy elsewhere — Dead autopsy not known — Unknown — Lost to follow-up

Fig. 5. — Work sheet for follow-up visits. It is this form that will be sent to private physicians for completion. This will then be the source for follow-up information on these patients.

on a particular group of cases. The date of diagnosis of the cancer is noted so that time of survival can readily be determined. The remainder of the requested information is concerned with extensiveness of the tumor, the method of diagnosis, treatment and results.

Nowhere in medicine is follow-up information more important than in malignant disease since this is a major yardstick in evaluating therapy. Thus of the 80 spaces available on the IBM punch card, only 30 are used at the time of initial registration. The remaining 50 spaces are reserved for annual follow-up information. The essential follow-up information is seen in figure 5 and coded on a sheet (fig. 6). It is from this sheet that the information is transfered to the punch card, each annual follow-up requiring seven spaces. Thus there is room for seven annual follow-ups. Space 80 is reserved so that it may indicate a "trailer card" on which additional annual follow-up information may be recorded.

All staff (charity) inpatients and outpatients and private inpatients are registered. Two major sources supply the names of the patients that are to be registered. The first is the record room. Here charts on all discharged patients are coded using the Standard Nomenclature of Diseases and Operations.[5] Before filing, each chart with a diagnosis of malignant neoplasm is sent to the tumor registry clerk. The second is the Department of Pathology. Here an accession book is maintained in which the names of all patients from whom specimens are received with the histologic diagnosis are recorded. From this information charts can be obtained and patients added to the registry.

Annual follow-up information on staff patients will be obtained from their charts since they are followed in the clinic. On private patients it is believed that their physicians will be a willing source of information. A form (fig. 5) will be sent to the physician with the request that he circle the proper information in each category. This form will then be returned to the registry and the information transposed to the code sheet (fig. 6).

This method of keeping a registry will fulfil the purposes previously outlined, and as time passes a tremendous amount of readily available information will be accumulated. This will be a source for critical evaluation of the results of therapy in all types of malignant disease. It is only by comparing the results of therapy with the known natural history of the disease and with results

CODE SHEET - FOLLOW UP - TUMOR REGISTRY
University of Miami School of Medicine and Jackson Memorial Hospital

SUBJECT	SPACE NUMBERS	SPACES
Condition of patient	31	
Treatment since initial therapy	32	
Recurrence	33	
Method of diagnosing recur	34	
Aim of therapy for this recur	35	
Development of another primary	36	
Autopsy	37	
Condition of patient	38	
Treatment since first follow-up	39	
Recurrence	40	
Method of diagnosing recur	41	
Aim of therapy for this recur	42	
Development of another primary	43	
Autopsy	44	
Condition of patient	45	
Treatment since second follow-up	46	
Recurrence	47	
Method of diagnosing recur	48	
Aim of therapy for this recur	49	
Development of another primary	40	
Autopsy	51	
Condition of patient	52	
Treatment since third follow-up	53	
Recurrence	54	
Method of diagnosing recur	55	
Aim of therapy for this recur	56	
Development of another primary	57	
Autopsy	58	
Condition of patient	59	
Treatment since fourth follow-up	60	
Recurrence	61	
Method of diagnosing recur	62	
Aim of therapy for this recur	63	
Development of another primary	64	
Autopsy	65	
Condition of patient	66	
Treatment since fifth follow-up	67	
Recurrence	68	
Method of diagnosing recur	69	
Aim of therapy for this recur	70	
Development of another primary	71	
Autopsy	72	
Condition of patient	73	
Treatment since sixth follow-up	74	
Recurrence	75	
Method of diagnosing this recur	76	
Aim of therapy for this recur	77	
Development of another primary	78	
Autopsy	79	
Trailer card information	80	

Fig. 6. — Code sheet for annual follow-ups. It is from this sheet that additional punches will be made on the IBM cards.

obtained by others that the true success or failure of therapy can be measured.

Acknowledgment is gratefully made to: Mrs. Ina Hughes, who adapted the information for IBM coding; Dr. Lorenzo L. Parks, Director of the Bureau of Special Services of the Florida State Board of Health, for his support; and the IBM Division of the University of Miami.

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1000 Northwest Seventeenth Street.

ABSTRACTS

Pregnancy and Parurition in the Obese Patient. By John J. Fisher, M.D., and Ivey Frey, M.D. Obset. & Gynec. 11:92-94 (Jan) 1958.

This study of the effect of obesity on labor was carried out on 100 consecutive obese patients whose weight was 200 pounds at any time during the antepartum course. Thirteen in this group and also in the control group of 100 were primigravidas. It was concluded that obesity influences both pregnancy and parturition. The effect upon pregnancy includes a greater incidence of hypertension and toxemia but a decidedly lower incidence of anemia. Moreover, the obese patient does not gain as much weight during pregnancy, yet she loses the same amount as the nonobese patient following delivery. She should therefore show a net loss in weight over that displayed by the nonobese patient. Compared to the control group, the obese patients in this series were predisposed to a higher incidence of prolonged labor, especially that prolonged beyond 24 hours. Obesity had little influence upon complications of delivery, malpresentation, or fetal mortality. A higher incidence of persistent posterior presentation was noted in the obese patient. The results of this comparison are presented in an effort to stimulate a similar study on a larger group of patients.

Smear-Section Correlation; A Cystologic Teaching Aid. By Gladys C. Clark, B.S., M.T. (ASCP), and Alvan G. Foraker, M.D. Am. J. Clin. Path. 30:45-46 (July) 1958.

In preparing to teach exfoliative cytology to the second year class of the College of Medicine of the University of Florida as part of the pathology course, the problem of correlation of smears and sections arose. Medical students (and physicians) study stained tissue sections from their first course in histology, through pathology. Their entire microscopic orientation is based on these sections. To facilitate understanding of cells in smears, it seemed wise to attempt as close a correlation as possible. Accordingly, hematoxylin and eosin-stained sections and Papanicolaou-stained impression smears of pertinent normal and diseased tissues were mounted on the same slide. The technic is described. The authors believe that the opportunity to compare the exfoliated cells with familiar tissue sections facilitates and clarifies an introduction to the cytologic method.

Spinal Epidural Hemorrhage: Spontaneous and Recurrent. By Thomas E. Scott, Jr., M.D. South. M.J. 51:1048-1050 (Aug.) 1958.

Hemorrhage into the spinal epidural space occurs rarely as only 25 verified cases have appeared in literature. Age does not seem to be an appreciable factor, and the preponderance of males is probably due to the more frequent exposure to strain and trauma. The lesion has occurred with almost equal frequency at all levels of the spinal canal. The additional case here reported illustrates the clinical syndrome and emphasizes the fact that the lesion can be cured. In this case of recurrent spontaneous spinal epidural hemorrhage in a nine year old girl, recovery was complete following surgical evacuation of the hematoma. The syndrome associated with this lesion is discussed, and a plea is made for a high index of suspicion and early surgical therapy.

Members are urged to send reprints of their articles published in out-of-state medical journals to Box 2411, Jacksonville, for abstracting and publication in The Journal. If you have no extra reprints, please lend us your copy of the journal containing the article.

PRESIDENT'S PAGE

Ava Atque Vale

Hail and Farewell. . . . . .

The Eighty-Fifth Annual Meeting is now a part of our historical record, and this administrative year of the Florida Medical Association has come to an end.

Your officers of the past year thank you, the Membership, for the privilege of serving you—if not always wisely, at least as well as they were able. We are indebted to you for your interest, trust and active participation in the programs that have led to whatever accomplishments we as an organization may claim. You, and you alone, have made them possible. We sincerely hope that our many deficiencies and our several failures will be the subject of thoughtful and profitable analysis by the more capable team which replaces us in implementing your wishes and directives.

Last year, as your President, I was privileged to appear in many places, with many different groups; and as your representative, enjoyed the respect and confidence of leaders in all fields. This experience emphasized to me the degree to which the thinking of the American people is changing with respect to social and economic problems. I am convinced that we must become acutely aware of the fluid state of our times, and of the many dilemmas resulting from new and changing concepts.

As a profession we must participate in this evolution, and we must do so publicly, constructively, critically—but insofar as possible, without bias. We must defend our positions only after we have made certain that they are sound, tenable and in the best public interest. This is the job of the F.M.A.—to be carried out through your help and mine. Let us offer this help freely and graciously to the end that the dignity and preeminence of our profession be maintained.

Your grateful servant,

J. W. Annis

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Medical Schools and Medicine's Progress

The strides which Medicine has made toward the ultimate understanding and control of disease have been long indeed during the past two decades. The over-all death rate has declined markedly, and in cases of specific diseases the decline has been almost unbelievable. There has been alleviation from suffering in those diseases not yet brought under control, and even the newborn can look forward to almost 10 years of additional life expectancy. The strides have been great, but even greater ones must be made in the oncoming years.

It is not by accident nor by any supernatural wisdom that this progress has been made. Rather, it has come about through tireless and unselfish efforts of men in medicine who are dedicated to the belief that all questions have answers and the answers can be found if enough searching is done. These are the research men and women to be found scattered in institutions organized and operated primarily for research, in the staffs of teaching and research hospitals, in the offices of practicing physicians, and in the faculties of medical schools. They are a dedicated group and ask only that they have space, time, and funds for the conduct of their investigations.

The people of our country have become quite conscious of the contributions of the researcher, and the eagerness with which the practicing physician applies each new advance to expand his diagnostic and therapeutic armamentarium. Groups of citizens, interested in some specific condition or disease, have voluntarily organized themselves into agencies to find the dollars which will support research effort in their specific interests. Industry has recognized the dividends from investments in medical research and gives heavy dollar support. Finally, our federal government, realizing the health of its citizens is one of its most important assets, has built into its annual budgets many millions of dollars to further medical research. All in all, the combined effort totals about $300,000,000 per year, supporting thousands of projects, each contributing directly or

indirectly to a more complete understanding of the human mechanism and to a more healthy life for each individual.

It would be easy to conclude that if enough dollars were provided in the coming years, the answers to all of man's plagues could be uncovered. There is evidence that more dollars will be forthcoming, and some have estimated the annual expenditure for research by voluntary agencies, industry, foundations, and the federal government may reach the level of $1,000,000,000 by 1970. There is a serious fallacy in presuming that research can be produced by the simple expedient of providing dollars, however. Research can be productive only if there is curiosity, imagination, and dedication, and these characteristics exist, not in dollars, but in people. No one questions the need for dollar support of research, but those who provide the dollars must be aware that research will not be done except by people.

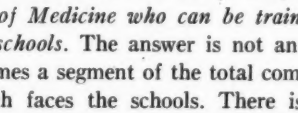
It is estimated about 20,000 professional men and women are engaged in medical research today, and if the enthusiasm and financial support continues to the level predicted for 1970, about 45,000 professional people will have to be active. If all these people were of nonmedical backgrounds, the problem of producing them might be of indirect albeit important interest to medicine. This is not the case, however. Although many of the researchers are chemists, bacteriologists, physiologists, pharmacologists, and others trained in the basic biological and physical sciences, doctors of medicine are also needed for medical research. It is because of this aspect that the medical schools must concern themselves with the production of research personnel. If all research were done outside the medical schools, we also might not have to concern ourselves so much with the problem, yet the medical schools are engaged in medical research in addition to their other duties of education and service. Of the total annual expenditures for medical research in the United States, about 20 per cent is carried in programs in the medical schools.

Over the past decade or so, medical education has been changing, both in content and presentation of the curriculum, and in the objectives of the four year program. Whereas medical schools used to be considered as having a primary objective of training for general practice, the tremendous advances in knowledge and skills have made it impossible that a four year curriculum can adequately prepare the individual for general practice. Arguments have been presented that the schools have placed too much emphasis on training for specialty practice; yet in this criticism as in that concerning general practice preparation, the four year curriculum is inadequate to prepare for specialty work. In its educational offerings, a medical school can hope only to give its students an opportunity to gain a broad foundation in the basic medical sciences and their relationships to clinical problems. During their progress through the medical curriculum, students will be influenced by many people and factors, and the ultimate application which they make of their basic backgrounds will be determined by these people and factors.

Faculties of medical schools are called upon to influence the students to choose varying careers. Of recent years, with the tremendous increase in research activity in the medical schools, they have been called upon to guide students into research interests.

In turning back to the anticipated needs if medical research is to continue its upward trend, it is evident the schools must play a greater role than they have in the past. Of the 25,000 additional research personnel expected to be needed by 1970, approximately 3,200 M.D. researchers will be needed *over and above the number of Doctors of Medicine who can be trained by the existing schools*. The answer is not an easy one, but becomes a segment of the total complex problem which faces the schools. There is evidence that more physicians for practice will be needed because of the rapidly increasing population demands. The schools themselves must try to train more Doctors of Medicine who will remain in academic medicine as teachers, and now, there is the realization that the schools will be called upon to carry more and more of the research activity in medicine with the consequent need to influence more students to turn to research interest as a career.

The task is a mighty one.



In Retrospect

The Association's extremely active retiring President, Dr. Jere W. Annis of Lakeland, found his schedule for April, the last month of his term of office, quite as demanding as it was during the other 11 months of his service. He was in Birmingham on April 9 to 11 as fraternal delegate to the annual meeting of the Medical Association of the State of Alabama; he flew from there to Tallahassee in time to present the Association's awards at the State Science Fair on April 11; and in addition to preconvention demands upon his time, he rounded out the month by addressing the Orange County Tuberculosis and Health Association in Orlando on April 30.

During his year in the Association's highest office Dr. Annis has fulfilled some 25 speaking engagements and because of other commitments has declined approximately half that number. In addition, officially representing the Association, he has attended 41 other functions without presenting an address. To meet these engagements he has traveled not only the length and breadth of the state but also of the nation for they necessitated visits to San Francisco, Washington, D. C., Chicago, Minneapolis, New Orleans and Birmingham. The miles traveled on this official business added up to 28,000.

Interestingly enough, he traveled some 10,000 miles during the year on other than the Association's business. There were trips to Washington, San Francisco, Biloxi, Miss., and elsewhere as a representative of the Florida Heart Association, Blue Shield, and the Chamber of Commerce, and for refresher courses.

Asked by The Journal to comment on the activities of his year of service, Dr. Annis replied:

"As my term as President draws to a close, my reflections are that it has been a very happy and instructive year, as far as I am concerned, and I hope a satisfactory one for the Association. It did entail more time and traveling than I had anticipated; yet I feel convinced that none of it was wasted, and that at least this much, or more, is necessary for the proper advancement of the interests of our Association. It is, of course, an exacting job; yet one which I feel must be carried out conscientiously and diligently if we are to make the advances which we contemplate. I do not believe that it imposes an impossible, or even an impracticable, strain on the individual. Financially, of course, it does impose something of a burden, but this, after all, is to be anticipated with the job.

"I have met a great many individuals, both while traveling and at the 60-odd engagements which I have kept, and amongst them made many friends which, together with the sense of service to the organization, has more than rewarded me for any possible sacrifice on my part."

Speaking to the Orange County Tuberculosis and Health Association on "The Role of the Voluntary Health Agencies in Modern Medicine and in Public Health," Dr Annis emphasized the need for voluntary health agencies and their important place in the nation's over-all health picture. He characterized their success as a fulfillment of a "basic need in a people who revere free enterprise and unlimited opportunity, as well as the rights of the human being, and who have a basic and fundamental concept that we are, at least to a degree, our brother's keeper. Here, certainly, is an opportunity for the expression of that free enterprise—limited only by the enthusiasm of the workers, and offering the satisfactory accomplishment of reaching an altruistic and satisfying goal."

May Cover

Susruta
Surgeon of Old India

Susruta, famed Hindu surgeon, is depicted in the home of a noble of ancient India, about to begin an otoplastic operation. Drugged with wine, the patient is steadied by friends as the surgeon sets about fashioning an artificial ear-lobe. He will use a section of flesh to be cut from the patient's cheek; it will be attached to the stump of the mutilated organ, treated with hemostatic powders, and bandaged.

(Courtesy of Parke, Davis & Company)

Delineating the role of physicians in relation to the voluntary health agencies, Dr. Annis said, "Their role must be in guiding the administration of the facilities and the expenditure of the time, money and talents of the organization. They must evaluate, rather than administer. Their job is that of the counselor—not the fund-raiser or the molder of public opinion. In this way they can be of real value to the millions of Americans who annually show their desire to help combat illness and disease, and who have formed the greatest agent yet known for the dissemination of medical information."

Holding the torch high as always, Dr. Annis concluded this closing address of his administration to a lay group with the salient fact his service so well exemplies that in the health field "progress is indeed our most important product."

A.M.A. Annual Meeting, June 8-12, 1959
Dr. Orr To Be Inaugurated as President

A record number of members of the Florida Medical Association should be among some 15,000 physicians who will gather in Atlantic City, N. J., next June 8-12 for the 108th Annual Meeting of the American Medical Association. This meeting is of particular interest to Florida physicians for it will mark the accession of Dr. Louis M. Orr of Orlando to the presidency of the national organization. In this well deserved honor to one of its most distinguished members the Association and all Florida take great pride.

The five day convention—the largest medical meeting in the world—is being held in Atlantic City for the sixteenth time. The first meeting was held there in 1900.

Doctors will have the opportunity to catch up on hundreds of aspects of a rapidly changing medical world. This information will be presented in the form of scientific exhibits, lectures, motion pictures, panel discussions, televised surgical procedures, and industrial exhibits. New medical research findings and methods of handling daily medical problems will be reported by 500 physicians in scientific papers or participation in symposium and discussion groups. There will be over 300 scientific exhibits and a similar number of industrial exhibits on display at the famed Convention Hall. The latter group will be exhibited by pharmaceutical houses, medical equipment firms, and other manufacturers.

The House of Delegates will meet throughout the week in the Traymore Hotel, headquarters for the meeting. The 20 scientific sections of the A.M.A. and five government medical services will also be represented in the House.

First order of business for the House will be the selection of a physician to receive one of medicine's highest honors — the Distinguished Service Award. He will be elected from three persons, whose names are submitted by the Board of Trustees. Nominees are screened by the Board from names submitted by the general membership.

At the opening session Dr. Gunnar Gundersen of La Crosse, Wis., outgoing president, and his successor, Dr. Orr, will address the delegates. A president-elect to serve one year and be inaugurated as president in 1960 will be elected during the meeting.

For the fourth year, high school students who have won special A.M.A awards in the National Science Fair will show their prize-winning work at the scientific exhibit. The annual film program, another popular feature, will be highlighted by the presentation of 60 medical motion pictures.

The Woman's Auxiliary to the A.M.A. will hold its meeting Tuesday through Thursday. Representatives of the 75,000 members—all doctors' wives—will discuss their program in sessions at the Chalfonte-Haddon Hall.

Other sidelights of the meeting will be the special art exhibits including one by the American Physician's Art Association, and the forty-third annual American Medical Golfing Association tournament.

For advance hotel and meeting registration information, contact the Convention Services Department, American Medical Association, 535 North Dearborn St., Chicago 10, Ill.

Science and the Scientist In the Satellite Age

In mid-March, during Science Week throughout the nation, Dr. Jere W. Annis, President of the Florida Medical Association, addressed the Lions Club of his home city of Lakeland on "Science and the Scientist." Timely always, with the abrupt dawning of the Satellite Age this subject has become of vital importance to every citizen of the world. Sudden, unprecedented and intense interest in scientific advance has become manifest, and the scrutiny of the entire world is now focused on scientific education. Dr. Annis' enlightening remarks are therefore stimulating.

Defining Science as "the sincere orderly investigation of everything in the world around us," Dr. Annis discussed what the creation and development of a scientist entails. He expressed amazement at the general misconception in this regard, particularly among high school students. Citing a recent survey conducted to ascertain why the number of top-flight high school graduates entering the nation's colleges and universities has steadily declined over the past five or six years, he brought out these facts:

"First of all, 14 per cent of the students interviewed felt that there was something essentially evil about Scientists, and 9 per cent believed that one could not be a Scientist and still be entirely honest. Forty-five per cent felt that their own school background was too poor to permit them to choose a career in Science, 35 per cent of them believing that it was necessary to be a genius of some sort to be a Scientist—an entirely false premise. Twenty-five per cent of those interviewed felt that Scientists as a group were more than a little odd; and a slightly greater number felt that Scientists did not have any time to enjoy life—and that they were given neither an enviable nor desirable position in our social order."

Coupled with this concept of a Scientist as a member of a somewhat mysterious shadowy calling bordering on the occult and in which there is little chance for success and acclaim was the impression of many youngsters that most of the major discoveries in Science have already been made. If the nation is to have a solid core of future Scientists, Dr. Annis declared, these erroneous concepts of intellectually well equipped high school students must be dispelled. Certainly, tremendous strides have been made along all scientific avenues, but even so, "the surface has barely been scratched, and our knowledge in all fields represents but tiny islands in the tremendous sea of our ignorance." Although the United States compares well in the scientific field with other nations, "we can keep pace only by continuing to encourage our young people to elect careers in Science—and this can be done only if such careers are made attractive from the standpoint of a reasonable financial reward and the respect of the community—for this latter is a most important factor to all of us."

To produce a real Scientist interested in discovery and research, Dr. Annis listed these requirements: "There must be a deep-seated interest and desire—a wonder and a thirst, deeply rooted in the individual himself—a hunger for knowledge, truth and the revelation of the hidden mysteries of life. This the individual must furnish; and this, I feel sure, cannot be accomplished by exposure to knowledge alone. Obviously, the candidate must have a good mind; but just as obviously he does not need to be a genius. He must be dedicated and wedded to the profession that he chooses. He must pursue it in an objective manner, using to the best of his ability his faculties of observation, judgment and deduction during every waking hour. His work must constitute the most important—indeed, almost the *only* important thing in life—for it will remain a part of him as long as he breathes. And he must pursue this restless search for more knowledge with dogged determination, undaunted by failure after failure, and brightened only by the small and infrequent flames of discovery, as long as he shall live. And he must work—work—work, unceasingly, to improve his stock-pile of knowledge, his grasp of the problem which he is attacking." These are the requirements for "the scholars—the investigators with an objective experimental approach to universal and basic problems. These are the men of Science—the Priests of Progress."

Regarding the Florida Assembly's meeting of "Atoms for Power" last fall, in which he was one of the many scientists participating, Dr. Annis commented in part: "The Assembly felt very strongly that there was need for improvement in our educational system, and that we should give priority to the cooperative effort in improving the quality of elementary and secondary education. . . . But perhaps most significantly, the Assembly felt that the education for the Nuclear Age is not simply a problem of training Scientists, technologists and technicians, but that it is even

more a problem of educating businessmen—public administrators—professional men—the whole lay public—to the needs of a new era. All of our citizens need education, in order adequately to understand and evaluate this rapidly unfolding field. All of us need to realize the importance of the facts involved in this rapid march of Science."

Rounding out his concept of Modern Science with a plea to the laity for serious and constructive thought regarding it, Dr. Annis concluded: "And let us remember, finally, that the true Scientist is engaged in the systematic exploration of the riddle of life and death—often with a view to *overcoming* death—that such discoveries as mathematical infinity—the fourth dimension—electromagnetic waves—radar, et cetera, require, when you analyze them deeply, spiritual as well as scientific equipment, and the tremendous vital energy which stems from an altruistic view of life—beginning with the love of one's neighbor and the idea of life itself as a sacrifice—and which is kept alive and active by the basic principle and idea of our Western World: the idea of freedom of personality, of thought, and of expression."

Dr. Orr Addresses Pinellas-Hillsborough Dinner Meeting

Dr. Louis M. Orr of Orlando, President-Elect of the American Medical Association, was the guest speaker at a joint dinner meeting of the Pinellas County Medical Society and the Hillsborough County Medical Association, held in the ballroom of the Fort Harrison Hotel in Clearwater on March 2, 1959. Physicians and their wives from other neighboring counties of the West Coast area were also among some 300 who attended. Dr. Rowland E. Wood of St. Petersburg, the president of the county organization, presided, and Dr. Walter H. Winchester of Dunedin was in charge of arrangements for the dinner.

In his address, Dr. Orr discussed the positive program for older citizens now being sponsored by the American Medical Association and pointed out that the new program includes "not only the health and physical needs, but the social, economic, occupational and psychologic requirements" of this segment of the population—special considerations "that no huge federal spending will solve." He stressed over and over that the medical profession must provide leadership and imagination for a multi-phased approach to health care of the aged and must defeat the unsound Forand bill now before the Congress. This legislative health measure would put an important segment of the senior citizen population entirely under a bureaucratic system for it "is an expansion of Social Security to include hospital and perhaps medical benefits to certain Social Security beneficiaries."

This bill, Dr. Orr explained, would "add service benefits to a Social Security program that now pays cash benefits. This new principle would . . . open the door for evolution of a series of tax-paid health care for the entire nation. Indeed, it would establish the principle that provision of medical care for any segment of the population, or all of it, is a federal function." The cost, he declared, would be "exorbitant" and would result in raising the Social Security rates for all. "Such legislation," he added, "takes away individual incentives and substitutes compulsion, an idea repugnant to Americans since the time of the Revolutionary War."

"We are encouraging Blue Cross, Blue Shield and private insurance to accelerate the availability of coverage for persons over 65," he related. "A positive health program for older citizens has been launched by the A.M.A. It calls for an all-out approach to the needs of all the aged, sick or well, so that special needs will be less in the future.

"We are determined to fight proposals for compulsory health insurance in any form. American medicine holds that the principles under which voluntary prepayment plans, independent hospitals and private practice of medicine operate are too important, too valuable to throw away. We believe that every avenue should be exhausted in defense of the inherent freedoms on which they are based."

In closing, Dr. Orr expressed the belief that "we should unite as physicians, and as medical and hospital associations, in realistic, positive approaches to all phases of health care among our people, young and old."

Proceedings of Annual Meeting

The Proceedings of the Eighty-Fifth Annual Meeting of the Florida Medical Association being held May 2-6 at Bal Harbour is scheduled for publication in the July issue of The Journal.

Florida Association of Blood Banks Meets at Lido Beach May 15-17, 1959

Registration for the Thirteenth Annual Meeting of the Florida Association of Blood Banks is scheduled for 2:00 to 8:30 p.m. on Friday, May 15, at the Surf and Sand Hotel, Lido Beach, where all sessions will be held. The meeting will continue through Sunday noon. All hotel reservations should be made directly with the hotel, P. O. Box 1509, Sarasota.

Preceded by a dinner meeting of the Board of Directors, the annual business meeting will be held at 8:30 p.m. on Friday. The morning and afternoon scientific sessions on Saturday, beginning at 9 a.m. and 2 p.m., will be presided over by Dr. R. P. Tew, of Lakeland, President, and Leo L. Foster, LL.B., of Tallahassee, President-Elect. Distinguished out-of-state guests participating in the morning session will be Dr. Ralph M. Hartwell, of New Orleans, President of the American Association of Blood Banks, and Dr. Richard E. Rosenfield, Director of the Blood Bank of Mount Sinai Hospital, New York City. Dr. Hartwell's subject will be "AABB—Its Scope and Contributions." Dr. Rosenfield will lecture on "Hemolytic Disease of the Newborn Due to ABO Incompatibility" and "Identification of Immunized Donor."

Florida participants in the morning program will include Dr. James E. Kicklighter, of Sarasota, President-Elect of the Sarasota County Medical Society, who will deliver the address of welcome, Dr. John B. Ross, of Jacksonville, Medical Director of the Jacksonville Blood Bank and chairman of the Inspection and Accreditation Committee of the South East District Clearing House, whose subject is "Deficiencies Found in Blood Bank Inspections," and Dr. James J. Griffitts, of Miami, Associate Director of the John Elliott Blood Bank, and chairman of the Standards Committee of the Florida Association of Blood Banks, who will speak on "Blood Preservation and Criteria for Discarding Blood." Concluding the morning session, Mr. Foster will discuss "Liability for Injury or Death Caused by Transfusion of Blood."

Dr. Robert G. Cushman, Chief of Hematology, Riverside Hospital, Jacksonville, the first speaker on the afternoon program, will discuss "Red Cell Survival." Other speakers and their subjects include Dr. Robert E. Klein, Director of the Blood Bank of the University of Florida Teaching Hospital, Gainesville, "The Relations of Community Blood Banks With State Institutions;" Dr. Ross, "An Idea for Donor Procurement;" Col. R. E. Hunter, Clearwater, "Insurance and Finance;" Sarah D. Murphy, R.N., St. Augustine, "Report on Small Blood Banks;" Dr. Ross, "Coronary Occlusion Following Blood Donation;" and Mr. C. A. Catassi, Oakland, Calif., "Blood Bank Accounting."

The Sunday morning session will be devoted to a "Workshop for Technicians" and a "Roundtable Discussion on Blood Bank Administration."

The Florida Association of Blood Banks was a pioneer in the blood bank field. The first state association to be organized, it was the inspiration of Dr. Robert B. McIver of Jacksonville and was organized even before the American Association of Blood Banks in 1947. Its excellent record of progress will be reflected in this thirteenth annual meeting, which should attract a large attendance.

Postgraduate Seminar Mount Sinai Hospital Miami Beach, May 7-9, 1959

The Mount Sinai Hospital of Greater Miami presents its Ninth Annual Postgraduate Seminar on May 7-9 at the Deauville Hotel in Miami Beach. Both the theme, "Recent Advances in Diagnosis and Therapy," and the meeting place are the same as last year. The registration fee is $20, and there is no charge for medical students, interns and residents. The Seminar is approved by the American Academy of General Practice for Category I credit.

"The Problem of Antibiotic Resistant Infections" is the subject of the first of three symposiums on the program. The other two deal with "New Concepts of Burn Therapy" and "Congestive Failure."

The distinguished lecturers and their subjects are: Dr. Ivan L. Bennett, Baxley Professor of Pathology, The Johns Hopkins University School of Medicine, "The Problems and Management of Infection," "Fevers of Unknown Origin," and "The Treatment of Pyelonephritis;" Dr. David L. Drabkin, Professor and Chairman, Department of Biochemistry, University of Pennsylvania Graduate School of Medicine, "Present Status of the Problem of the Porphyrias," "Inherent Functional Disabilities—Relative Excretory Inability for Iron, and Problems of Sideropenia and Cytosiderosis," and "Inherent Functional Disabilities—Re-

lative Excretory Inability for Uric Acid, and Problem of Gout;" Dr. John B. Hickam, Chairman, Department of Medicine, Indiana University Medical Center, "Advances in the Evaluation of Pulmonary Function," "The Circulation of the Optic Fundus in Cardiovascular Disorders, as Observed by a New Method," and "New Data in the Field of Pulmonary Failure and Cor Pulmonale;" and Dr. Joseph E. Murray, Clinical Associate in Surgery, Harvard Medical School and Massachusetts General Hospital, "Facial Fractures and Deformities," and "Organ and Tissue Homotransplantation—Physiological and Immunologic Considerations (Part I) and Surgical Considerations (Part II)."

In addition, Dr. Maurice N. Richter, Professor of Pathology and Chairman of the Department of Pathology, Postgraduate Hospital, New York City, will lecture on "Interrelationships of the Lymphomas," "Pathology of Hypersplenism," and "Indications for Splenectomy From the Standpoint of Splenic Pathology." Dr. A. Earl Walker, Professor of Neurosurgery, The Johns Hopkins University School of Medicine, will lecture on "Surgical Experiences in and About the Brain Stem," "Neurosurgical Approach to Intractable Medical Conditions," and "Surgical Consideration of Neck Pain;" and Dr. Paul Wood, Director, Institute of Cardiology and Physician to the National Heart Hospital and Brompton Hospital, London, on "The Physiological Basis of Physical Signs," "The Venous Pulse" (motion picture) and "Pulmonary Hypertension."

LETTERS TO THE EDITOR

Dear Dr. Richardson:

The attached material completes my study on "A New Treatment for Cutaneous Larva Migrans Employing Oral Promethazine," and contains information not previously available and not heretofore reported. It may be of value to those who are now trying the treatment as published in that article in the January 1959 issue of the Florida Medical Journal of the Florida Medical Association.

Treatment of Larva Migrans Addendum

Because of the possibility of the peculiar manic type reaction to promethazine (Phenergan), there may be some hesitancy in using an effective dose. It appears that this occurs more commonly in children than in adults, who are more likely to have nightmares. I have found that, with children, a small amount (6.25 to 12.5 mg.), given three times a day before meals, appears to reduce markedly the incidence of such reaction. The indicated dose (25 to 75 mg.) is given at bedtime as recommended. The same procedure may be used to "desensitize" adults; 12.5 to 25 mg. is given similarly without causing unwanted daytime drowsiness. The proper bedtime dose is given without regard to that given before; and, without regard to the minor increase in the total dosage.

In this series of 92 cases, there were no immediate or delayed toxic reactions of any kind. Many of the patients, treated for larva migrans, have been seen later for other conditions, and there have been no indications of any late effects from the drug. These patients have offered no complaints with regard to the drug itself.

The term "cutaneous" or "visceral" should be deleted in speaking of any larva migrans infestation. It is physically impossible to determine if there is — or is not—a simultaneous penetration of deeper tissues as well as of skin. In any such infestation, it must be assumed that there are indeed larvae in other tissues, even though only the cutaneous burrows are seen. The presence of an eosinophilia makes this more positive than presumptive. It is for this reason that a systemic anthelmintic is used; and, for this reason that any local treatment must be inadequate. It seems that this has not been sufficently emphasized, for several of my colleagues have questioned me about complicating an apparently successsful method which employs only simple freezing. I made before-and-after eosinophil counts in 25 cases. These showed a 10 per cent to 18 per cent eosinophilia, which returned to normal in seven to 10 days after treatment was completed. When a persistently high count was found, it was then known that the treatment had not been successful. This meant that the course had to be repeated, usually at a higher dosage level; or, that the infestation was not responding to the medication. It was found, here, that those worms not succumbing to Phenergan usually did not respond to any combination of vermicides; some infestations just did not respond to anything.

In one such case, the probable source of worms was a pet monkey. In a few cases, there may have been some indication that mice were the source. There were a few cases intimately associated with parakeets; but, I would offer no comment on a

possible connection. A number of cases appeared to have direct connection with cats or dogs. When questioning could show some reasonable relationship, the patient or family was advised to have the pet wormed. In most cases, it was not possible to discover the source of infestation. If speculation is permitted, it appears that the larvae of nematodes are not the only agents causing this condition. One may wonder if the larvae of cestodes and of trematodes are not also causative agents. Because of the behavior pattern of larva migrans, it may follow that man is neither the definitive nor the intermediate host for the adult worms.

Sincerely,
Joseph L. Greene, M.D.

OTHERS ARE SAYING

Religion and The Doctor

A very interesting innovation in the field of religious education was tried in Jacksonville in December, and it was so successful that it is worthy of being brought to the attention of the members of this society.

An invitation was extended by Bishop Hamilton West to all practicing Episcopal physicians in Florida, who belong to the American Medical Association, to attend the "Cathedral Conference on the Professions." This conference was devoted entirely to the medical profession and to the religious, moral and ethical problems encountered by those who practice the Healing Art. It was indeed gratifying to note the number of Jacksonville physicians who attended, and particularly impressive is the fact that those who attended the conference were present at all of the sessions, except for a few emergency calls which caused temporary absence.

The conference began with a dinner on a Friday evening at the Diocesan House of St. Johns Cathedral, Jacksonville, following which the first session was held in the library. Group conferences were held throughout the next day, and the participating physicians were guests for breakfast, supper, and dinner, eating together with the clergy. Sunday morning the group took Communion together; then breakfast was followed by a final group discussion, after which all attended the eleven o'clock service in a body. Between twenty and twenty-five physicians attended each session. The discussion was led by Reverend A. T. Mollegen, Professor of Systematic Divinity, Virginia Theological Seminary, Alexandria. The success of the conference can be attributed directly to the brilliant leadership and profound theological philosophy of Dr. Mollegen. His ability to take facts and thoughts and group them together into a closely-woven, concise answer to questions posed by the group was so remarkable that at no time did the discussions lag.

All who attended the conference benefitted from it, and answers to many difficult questions were worked out. The response was so encouraging that it would seem highly desirable for other religious denominations to sponsor such a conference for practicing physicians of their respective faiths. It certainly would help bring us and our practice into a closer relationship with God.

R. C. P.
Monthly Bulletin
Duval County Medical Society
February, 1959

STATE BOARD OF HEALTH

Polio Immunization and Tonsillectomy

There is considerable question in the minds of many physicians concerning the advisability of performing tonsillectomy and adenoidectomy during the polio season regardless of whether or not the child has received the triple immunization against polio.

The following abstract from a recent release from the Public Health Service is quoted in order that physicians may have the benefit of the opinion of the Service concerning this problem.

"In early January, the wire services quoted Dr. Albert Sabin, saying 'that the ban on summertime tonsil and adenoid operations in children might be lifted under some conditions. . .'

"This question was referred to Drs. Smadel and Murray of NIH and Dr. Pizzi of CDC. They believe that a risk remains in performing tonsillectomies even on persons who have received three doses of vaccine. This is due to the fact that three injections produce only about 80% effectiveness in preventing paralytic polio. Furthermore, there is evidence that polio immunization does not preclude reproduction of virus in the intestinal tract and there is evidence that the portal of entry of virus following tonsillectomy occurs from exposed nerve fibers in the pharynx where the virus is proliferating.

"If one could be assured that the immunized person had a high level of immunity to the three types of virus, there would be little risk but, of course, it is impractical to ascertain that this state exists before operation.

"An unpublished report by Neal Nathanson (cited by Dr. Pizzi) states that: 'Analysis of cases age 5-14 showed that of 22 unvaccinated bulbar cases 9 had had tonsillectomies while of 11 vaccinated bulbar cases 9 had had tonsillectomies. These data provide a slight suggestion (not statistically significant) that the tonsillectomy-related excess of bulbar paralytic cases may not be prevented by vaccination to the same extent as other types of paralytic poliomyelitis.'"

BLUE SHIELD

The Importance of A Strong National Blue Shield

DONALD STUBBS, M.D., CHAIRMAN,
BOARD OF DIRECTORS, BLUE SHIELD
MEDICAL CARE PLANS

I am reminded of the dinner held down here in the South where the Master of Ceremonies, who was a preacher, had to stand up and confess to his congregation that due to an unfortunate difficulty, unforeseen and tragic, rather than to serve peaches and cream for dessert, it was necessary to serve prunes. So if you do not like prunes, now is the time to leave, and there will be no prejudice involved.

The times are troubled for almost everyone. The argument that I might give for a strong national Blue Shield is that it would make my position more important. I could go everywhere and be welcomed with the kindness that you bestow upon me in Florida, even in Yankee territory. Now there is a satisfaction in being able to pretend honestly to rebellious feeling in foreign territory like the North. The Yankees really think they won the war and so they look down upon anyone who holds up the argument that it is not over yet. Since they think they are a majority looking upon a rather weak minority, they are always rather kind about it. Of course, those few who are still in the minority have a sympathetic attitude toward anybody who stands up and talks publicly in such terms. You cannot lose if you are a part of a real honest minority and just talk out plain anywhere you go. That is the reason Blue Shield gets along so well. You have just heard Dr. Wilhelm say this afternoon that the commercial insurance industry has spent about three or four times as much money on health care as Blue Shield has, which is true. It is a matter of record that we spend about two million dollars a working day paying doctors' claims, but that is only a relatively small part of the picture. It is an important part of it as I would like to develop.

The arguments for a strong national organization have to do with factors that have produced the change that we have all seen going on around us. There is nothing more significant about the modern age than the fact that all of the changes are continuing at a more rapid rate all of the time. The speeds of travel enable one to eat breakfast in New York and lunch in Miami, or, as soon will be the case, to eat breakfast in New York and lunch in San Francisco. They are part of the factors that have produced the shrinking world around us and the communications among people. People all over the world tend to contribute to this type of shrinkage.

So we have a situation in which all groupings that we have previously known must be broadened, expanded, and increased in their numbers if they are to have effectiveness in association with the modern problem. The trend in the United States is definitely toward increasing nationalism, and there is no denying this. At a meeting in New York, the Executive Vice-President of the Blue Cross Association emphasized that there have been a few unwritten amendments to our Constitution in this country. The first one nearly a hundred years ago was that a state or group of states may not secede from the Union. The more recent amendment is one which gives assurance that the individual citizen will be an object of

Dr. Stubbs is in private practice in Washington, D. C.

concern to the national government as far as his personal welfare is concerned. The Social Security system has been built up around this second unwritten amendment to the Constitution. If minorities and particularly if individuals are to be given protection under a democratic system, then without any question larger and larger groupings will tend to come into our way of life, and this becomes an argument for a national system of operation.

Perhaps I could add at this point a six word law to two previously enunciated 10 word laws that have created a certain amount of amusement in Blue Shield circles. The first 10 word law is, "If you play with anything long enough, it will break;" the second one, too, is a universal law, "Everything is more complicated than it seems to most people." The one I would like to enunciate and discuss briefly is, "War against entropy leads to overorganization." This requires some explanation, or you will not believe it.

Entropy is a term that the physicists and the mathematicians have used which has to do with the tendency of physical states to revert toward a system of chaos. We find that our social attitudes and efforts in the modern times tend to move into an evenly distributed chaotic existence. Bureaucracy tends to breed additional bureaucracy; all of the efforts that are produced in centralized government to deal with groups or with individuals tend to grow upon themselves, and we have the actual fact that overorganization is almost an inevitable consequence of efforts to move in these directions.

Purpose of National Blue Shield

The purpose of national Blue Shield, despite all of these eminent versions to the contrary about the tendencies that exist or overorganization for the extensive development of bureaucracy, can be stated in these terms. First of all, our efforts must be in the public interest; properly they should be so from our ethical standards. Practically they should be so because we know that success will be greatest if they are so established. There are two things that occur to me as being outstanding elements in the purpose. The first one is that in the public interest we serve our Member Plans in advancing locally controlled nonprofit physician-sponsored prepayment coverage of health insurance. Secondly, we seek to serve organized medicine in the promotion of its ideals and its practical efforts to maintain those parts of a revered profession that have served effectively for long periods of time in a voluntary self-serving system, rather than in one that is under some form of outside control.

The extent to which the voluntary system has been accepted in this country has been pointed out in the fact that 123 million out of 175 Americans today have some form of health insurance. This is not so much a proof that health insurance is now doing the job to be done as it is proof that the American people have accepted this system of coverage to such an astonishing degree. That which remains is not nearly so much to extend the numbers in this area as it is to extend the amount of coverage to each one. Blue Shield pays some of the bill for about one fourth of all the people in this country. I call your attention to the fact, however, that as we give more and more health care, we are actually multiplying our problems at the borderline between necessary and unnecessary care. We can divide the entire 175 million people into those who are sick almost to the point of death and those who are almost completely well, with the rest spread out in between. This last distribution of our people will fall into the normal distribution curve that is characteristic of all the differences that we know in living forms, including the human. If, therefore, we set all of our population into a normal distribution curve and say that we are going to give hospital care for about 10 per cent of them, at least once in the year, we draw a line then on our distribution curve that separates about 10 per cent on one side and 90 per cent on the other. The more medical care we give to more people, the larger the number will be who are borderline; they may need it and they may not need it. The decision as to which side of the line they fall on is a decision that cannot be made by the most effective brains in medicine. This is a requirement that will have to be determined by the people themselves in the last analysis, and they will buy an optimum amount of medical care.

We are dealing always here with the problem of diminishing returns for expenditure. It is perfectly possible to say that for any given case we could give more care for more people and that we might get some good from it, but when we are dealing with this statistically, we have to be concerned with what is a practical relation between the cost of care, the amount of care that is available and terms of the purveyors of the services themselves, the hospitals and doctors and people who need it. With that as a kind of general broad background, I should like to address the

problem of what we have done at the national level in Blue Shield to the present time.

Accomplishments

First of all, I believe the national organization, as has been the case in trade associations of all kinds, has furnished information in varying degrees for the Plans. This has been effective in considerable degree in many instances and has been at least some help in most instances among the 70 plus Blue Shield Plans in the country. We think that it could be very much more effective than it is and that this element of our operation is improving in two respects. I believe that under your able President, Dr. Carson, the matter of professional relations at this time is better nationally in Blue Shield than it has been at any previous time. I believe also that the technical operation at the national level can be very helpful to the Plans, particularly to those Plans which are in the stages of most rapid growth or have greatest need for it. Even here where you have been working on a new contract, it has been true that the information about contract building in other areas has been helpful.

Secondly, I believe that the national accounts operation moving toward a system of uniformity has been helpful because this is less confusing to the public which is moving around more than in previous years. The public tends to move from one Plan to another in rapid form, and similar offerings in different areas are less disturbing to them. In speaking of uniformity, I do not mean to say that national Blue Shield should aim at reduction of local option of local control. Those things, however, which have grown up naturally at the local level and are found to be similar in different parts of the country should be left in a stable form. We should cultivate our similarities and tend to play down our dissimilarities and differences at the local level because so many of our subscribers do move from one Plan to another.

We have better understanding back and forth at the A.M.A. level than ever before. In connection with the government relations, we have had a number of things that national Blue Shield has tried to stand for before the Congress in a way that was acceptable to all Plans. Among these have been the Medicare program which we helped to develop and particularly worked on in the direction of emphasizing that the program could work only by contractual agreement with physicians at the state society level, and that no Blue Shield Plan should be a prime contractor in it. It was not to be insurance at any stage, but a post payment program in which our experience and understanding of the insurance mechanism and physician relations involved might be helpful.

In connection with the problem of federal employees, there has been pressure for several years to give them health insurance of some kind, or to offer part payment towards it, as a fringe benefit incident to employment. There has been some concern in medical circles that for the government to enter this field would be improper because it would tend to use tax funds that belong to all the people in order to give benefits to a small segment of the population. It seems, however, that better understanding is coming out of the actual need for the government to act as other large employers do and to give some fringe benefits to federal employees.

In connection with the Forand type legislation, Blue Shield has been able to offer some logical support for the argument that private enterprise should be given a chance or some additional chance to show what it can do. It has been pointed out that more than 40 per cent of the over-aged people have some form of health insurance. This coverage is incomplete and overly expensive in many instances. It has been pointed out that if all the doctor bills were omitted entirely, it might not relieve this situation enough to do a great deal of good from a purely financial standpoint. But there is no question that for doctors to show honest good will in the intent to do something for a segment of our population which is important beyond its nine million numbers would attract much sympathy and attention of the rest of the population. We stand to gain a great deal of prestige before our citizen brothers in this country by offering something real to the aged who need more medical care than other members of the population. The national Blue Shield is working on a basic program to be presented at the national Board of Directors meeting in February. We hope the program can be referred for any assistance it can offer to the Plans about the country.

National Blue Shield has assisted in the arbitration of some controversies that involved doctors and their Blue Shield Plan in Connecticut. The contention that existed was rather strong between the state society and the Blue Shield Plan, and we believe it is being smoothed over in an effective way.

Future Outlook

What about the future in Blue Shield? The

Underweight Children Gain and Retain Weight with Nilevar®

One of the most convincing evidences of the anabolic activity of Nilevar, brand of norethandrolone, has been its ability to improve appetite and increase weight in poorly nourished, underweight children.

A highly important feature of the weight gain thus produced is that it is not ordinarily manifested by deposition of fat but as muscle tissue resulting from the protein anabolism induced by Nilevar.

Anorexia and "Weight Lag" Study—Brown, Libo and Nussbaum have reported* consistent and definite increases in rate of weight gain in eighty-six patients, ranging in age from 7 weeks to 15½ years. This beneficial action of Nilevar was observed in the patients with organic and traumatic disorders as well as those whose only complaints were poor appetite and/or persistent failure to gain weight.

In this study, the weight gained was not lost after discontinuance of Nilevar therapy although many patients did not continue the sharp gains effected by the drug.

The authors are of the opinion that Nilevar is a highly useful anabolic agent for influencing weight gain in underweight children.

When Nilevar is administered to children a dose of 0.25 mg. per pound of body weight is recommended and continuous dosage for more than three months is not recommended.

Nilevar is supplied as tablets of 10 mg., drops of 0.25 mg. per drop and ampuls of 25 mg. in 1 cc. of sesame oil. Further dosage information in Searle Reference Manual No. 4.

G. D. Searle & Co., Chicago 80, Illinois.
Research in the Service of Medicine.

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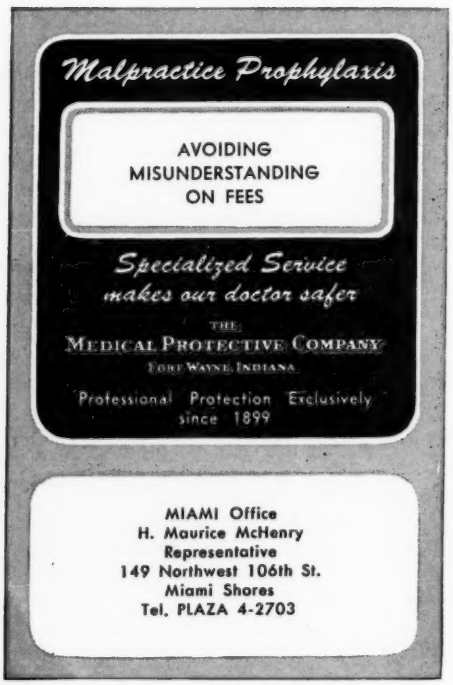
*Brown, S. S.; Libo, H. W., and Nussbaum, A. H.: Norethandrolone in the Successful Management of Anorexia and "Weight Lag" in Children, Scientific Exhibit presented at the Annual Meeting of the American Academy of Pediatrics, Chicago, Oct. 20-23, 1958.

consolidation of Blue Shield as the doctor's plan should be made in every place. The doctors understanding the special health needs of their patients have in Blue Shield a corporate structure that will enable them to have the greatest influence over the methods of management in the private insurance or free enterprise approach to the financing of health care. I think our partnership with medicine needs to be strengthened and that wherever there is a question of extending the function of this plan or of doing things that require physicians to make a greater sacrifice than in the normal operation of giving a service benefit program, this partnership needs to be at a strong working level. In other words, if the resolution passed by the House of Delegates of the A.M.A. is to be implemented, it must be implemented on the local instance of the medical profession using the Blue Shield Plan as its fiscal agent to set the pattern of a low cost program, and it must work not in the other direction. It is all right if the relations are so good that the doctors on the Blue Shield Board know that what they work out is going to be sympathetically reviewed and studied by doctors everywhere, but in general it is necessary that it be initiated by the doctors themselves as an evidence of their willingness and desire to do a good job in an area that requires special sacrifice on their part.



STATE NEWS ITEMS

Dr. H. Phillip Hampton of Tampa has been appointed a member of the Medical Advisory Board of the Sears-Roebuck Foundation.

A two week course in esophageal speech and organic voice problems has been scheduled for June 15-26 at the University of Miami School of Medicine. The course is being given this year for the fifth time and is open to specialists and resident physicians in otolaryngology, physical medicine and rehabilitation, and to speech therapists. It is under the direction of Dr. Nathaniel M. Levin, Clinical Assistant Professor of Otolaryngology. Applications are available from Dr. Homer F. Marsh, Dean of the University of Miami School of Medicine, Coral Gables.

Drs. George S. Palmer of Tallahassee and Paul V. Reinartz of Jacksonville were principal speakers at recent meetings of the Franklin-Gulf, Walton-Okaloosa and Jackson-Calhoun County Medical Societies.

A Seminar on Care of Premature Infants will be held May 18-22 at the Premature Demonstration Center, Jackson Memorial Hospital, Miami. It is approved by the American Academy of General Practice for 35 hours credit, Category I. Information may be obtained from the Bureau of Maternal and Child Health, Florida State Board of Health, Jacksonville.

Dr. Herbert L. Bryans of Pensacola represented the Florida Medical Association at the Seventh Annual Convention of the Florida League for Nursing held April 9-10 at Pensacola. Dr. Bryans, a past president of the Association, presented greetings at the banquet held on Thursday evening.

Dr. Maurice J. Jurkiewicz has been appointed Assistant Professor of Surgery at the College of Medicine, University of Florida, Gainesville. He was formerly instructor in surgery at the Washington University School of Medicine.

(Continued on page 1326)

WHEN MORE THAN MILD SEDATIVE EFFECT IS DESIRED

Consequently, TENTONE is more useful than other ataractic drugs in two areas: (1) mild to moderate conditions—when more than mild sedative effect is sought, (2) middle range of moderate to severe cases—when less than psychopathology is involved.

Indications include ■ common anxiety-tension states ■ obsessive-compulsive behavior ■ neurosis ■ depression ■ situational anxiety and hysteria

And the emotional components of: ■ agitation ■ restlessness ■ tremors ■ insomnia ■ alcohol- and drug-withdrawal syndrome ■ hyperkinesis ■ prenatal anxiety ■ rheumatic disorders ■ dermatoses ■ menopausal syndrome ■ premenstrual tension ■ peptic ulcer, other g.i. disorders ■ asthma, other allergy ■ multiple sclerosis, arteriosclerosis ■ malignancy, other progressive diseases

POSSIBLE POTENTIATION OF ANALGESICS AND NARCOTICS

Since tranquilizing drugs may potentiate the action of pain-relievers, sedatives, and barbiturates, they should be used with caution in conjunction with them, or to achieve a greater response to these drugs in various conditions when desired. They may also be useful in reduction of effective dosage to better tolerated, or non-habituating levels.

ADAPTABLE LOWER DOSAGE RANGES

Dosage must be individualized to severity of condition and response desired.

In mild to moderate cases: varies from 30 to 100 mg. daily.

In moderate to severe cases: from 75 to 500 mg. daily.

In psychotic or institutionalized patients, TENTONE may be useful as a substitute when toxicity precludes effective dosage of other phenothiazines, or as maintenance after hospitalization. Dosage may range from 100 to 1500 mg. daily in divided doses.

Supplied: 10 mg., 25 mg. and 50 mg. tablets

Lederle LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, N. Y.

(Continued from page 1322)

Drs. Samuel M. Day and John A. Wilhelm of Jacksonville were principal speakers at recent meetings of the St. Johns and Alachua County Medical Societies.

A discussion of "Office Management of Hypertension" by Dr. James B. Donaldson, Department of Internal Medicine, Hahnemann Medical College, Philadelphia, began the scientific program of the annual seminar and barbecue given by the Watson Clinic at Lakeland the middle of March. Following Dr. Donaldson on the program were Dr. Ormond S. Culp, head of the Section of Urologic Surgery, Mayo Clinic, and Associate Professor of Urology, University of Minnesota School of Medicine, whose title was "Pitfalls in the Palpation of Prostates," and Dr. John H. Moyer, Chairman of the Department of Internal Medicine, Hahnemann Medical College, who discussed "Diuretics." Following an intermission, Dr. Patrick J. Kelly, Consultant in Orthopedic Surgery, Mayo Clinic and Instructor at the University of Minnesota School of Medicine, presented an address on "Management of Fractures in Children," and Dr. C. Hunter Sheldon of Los Angeles discussed "The Carotid Artery and Its Relation to Cerebral Dysfunction." The program for the evening was a symposium on automobile crash injuries. Participating in addition to Drs. Culp, Moyer, Kelly and Sheldon were Dr. Francis T. Holland of Tallahassee, Chairman of the Medical Advisory Committee, Florida State Department of Public Safety, and Mr. John O. Moore, Director of Automotive Crash Injury Research, Cornell University, New York.

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The American College of Physicians has announced three postgraduate courses to be presented in May and June: "Cardiac Arrhythmias," May 22-24, Philadelphia General Hospital, Philadelphia. Director, Dr. Samuel Bellet; "Psychiatry for the Internist," June 1-5, Psychiatric Institute, University of Maryland Hospital, Baltimore, Director, Dr. Leo H. Bartemeier, and "Special Topics in Internal Medicine," June 15-19, University of Colorado School of Medicine, Denver, Co-Directors, Dr. Gordon Meiklejohn and Dr. C. Wesley Eisele. Registration for the courses is possible by contacting the executive offices of the American College of Physicians, 4200 Pine Street, Philadelphia 4, Pa.

The annual meeting of the Florida Trudeau Society was held April 10-11 at Palm Beach. The scientific program included "Scalene Node Biopsy," Dr. Ivan C. Schmidt, West Palm Beach; "Special Problems in Management of Pulmonary Insufficiency," Drs. Asher Marks and Jose Bocles, Miami; "Studies on Quantitation of Unaltered Serum-INH," Dr. Alfred H. Lawton, St. Petersburg; "Phenomenon of Aspiration Pneumonia and Lung Abscess," Dr. William W. Stead, Gainesville; "Lung Biopsy," Dr. Allan L. Armstrong, Tampa; "Fate of Patients Discharged with the Open-Negative Syndrone," Dr. Raymond F. Corpe, Rome, Ga.; "Modification of the Kirshner Medium: A Rapid and Economical Culture Medium for Detection of Tubercle Bacilli," Dr. Jack Reiss, Coral Gables; "Benign Esophageal Ulcers," Dr. Franklin G. Norris, Orlando; "Unusual Case Report," Dr. Howard M. DuBose, Lakeland, and "Bronchogenic Cancer," Dr. Oscar Auerbach, East Orange, N. J. Special guest speakers included Dr. Edward T. Blomquist and Mr. Morris Barrett, Washington, D. C.

The University of Southern California School of Medicine has announced its second annual

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postgraduate refresher course in Honolulu and on board the SS Lurline July 29-August 15. Information may be obtained from Dr. Phil R. Manning, Director, Postgraduate Division, 2025 Zonal Ave., Los Angeles 33, Calif.

The Washington University School of Medicine, Division of Gerontology, St. Louis, Mo., will conduct its third annual postgraduate course in geriatric medicine May 21-23. Information may be obtained by contacting the University, 5600 Arsenal St., St. Louis 9, Mo.

The Alabama Surgical Section of the International College of Surgeons will meet May 21-22 at the Russell Erskine Hotel, Huntsville. Dr. E. V. Caldwell of Huntsville is general chairman. A feature of the program will be a tour of the Redstone Arsenal for both physicians and their wives.

Dr. Richard F. Kidder of Lake Worth has been appointed a member of the board of directors of the Florida Heart Association.

Dr. Alvan G. Foraker of Jacksonville was principal speaker at a recent meeting of the Kiwanis Club of Fernandina Beach.

Dr. Bernhard Baer of Miami Beach has been elected one of 16 regional vice presidents of the national medical fraternity, Phi Lambda Kappa.

Dr. Hilliard R. Reddick of Quincy, president of the Leon-Gadsden-Liberty-Wakulla-Jefferson County Medical Society, delivered the address of welcome at the recent Cancer Conference for Nurses held at Tallahassee.

The 54th annual meeting of the American Trudeau Society is being held May 24-29 at the Palmer House in Chicago.

Dr. G. Dekle Taylor of Jacksonville spent the week of March 16 in Chicago attending a Workshop on Reconstructive Surgery of the Ear at Northwestern University.

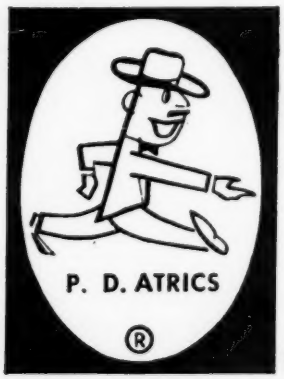
Dr. Wilbur C. Sumner of Jacksonville presented a paper entitled "Cavernous Hemangioma of the Maxilla with Report of Cases" at the fifth annual meeting of the Society of Head and Neck Surgeons, held in Washington, D. C., March 30-31.

At the twelfth annual meeting of the James Ewing Society, held in New York City, April 2-3, Dr. Wilbur C. Sumner of Jacksonville participated in the program. He presented a paper on "Spontaneous Regression of Human Melanoma; Clinical and Experimental Study," of which he and Dr. Alvan G. Foraker of Jacksonville were co-authors.

Dr. Ralph W. Jack of Miami, President-Elect of the Florida Medical Association, was among the group of Florida physicians attending the annual meeting of the American College of Obstetricians and Gynecologists held April 6-8 at Atlantic City.

The annual meeting of the Florida Society of Medical Technologists is scheduled for May 8-10 at the Robert Meyer Hotel in Jacksonville.

(Continued on page 1332)



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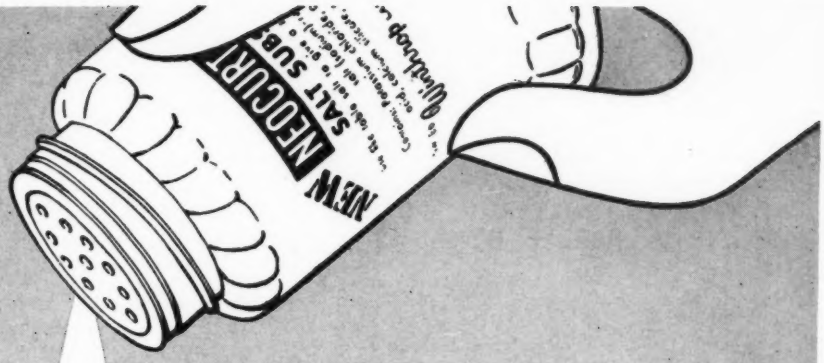

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(Continued from page 1328)

Speakers for the scientific program beginning the second day include Dr. Morris Tager, Emory University School of Medicine; Dr. Armand J. Quick, Marquette University School of Medicine; Dr. Nathan J. Schneider, Florida State Board of Health; Dr. Emanuel Suter, College of Medicine, University of Florida; Mr. Paul C. Hudgins, Medical Research Division, Veterans Administration; and Dr. Kurt M. Dubowski, College of Medicine, University of Florida.

The following letter has been received from Mrs. Joseph E. Rose, 619 Watson Ave., Pensacola: "As you know, Dr. Rose passed away Dec. 28, 1959. I have succeeded in disposing of some of his equipment but still have an x-ray machine, diathermy machine, operating table and two small white tables. I would be glad to give these things to a doctor if he will come for them."

COMPONENT SOCIETY NOTES

Brevard

Drs. Laurent P. LaRoche and Charles E. Russell of Cocoa, and Donald M. Mosher of Melbourne presented the program for the March meeting of the Brevard County Medical Society. Each described some phase of the medical operation at the Missile Testing Center.

Collier

The Collier County Medical Society has paid 100 per cent of its state dues for 1959.

Duval

Dr. David Cayer, Professor of Internal Medicine at the Bowman-Gray School of Medicine, Winston-Salem, N. C., was principal speaker for the April meeting of the Duval County Medical Society. The title of his address was "Recent Advances in Gastroenterology."

Franklin-Gulf

The Franklin-Gulf County Medical Society has paid 100 per cent of its state dues for 1959.

Indian River

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Jackson-Calhoun

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Lederle

Lake

Dr. William R. Daniel of Orlando was principal speaker at the March meeting of the Lake County Medical Society held at Howey-in-the-Hills. The subject of his address was the role of urology in hypertension.

Leon-Gadsden-Liberty-Wakulla-Jefferson

Dr. John M. Thompson of St. Petersburg was principal speaker at the April meeting of the Leon-Gadsden-Liberty-Wakulla-Jefferson County Medical Society held at the Suwano Country Club at Quincy. Dr. Thompson discussed "Recent Advances in Neurosurgery."

Manatee

The Manatee County Medical Society has paid 100 per cent of its state dues for 1959.

Orange

Dr. James B. Donaldson of Philadelphia was the featured speaker at the March meeting of the Orange County Medical Society. Dr. Donaldson's paper was entitled "Ambulatory Treatment of Hypertension."

Pinellas

Dr. Anthony Ridolfo, a member of the research staff of Eli Lilly and Co., Indianapolis, Ind., and former Associate Professor of Pharmacy at Ohio State University, was principal speaker at the April meeting of the Pinellas County Medical Society. Dr. Ridolfo discussed "Management of Diabetes Mellitus."

Seminole

The Seminole County Medical Society has paid 100 per cent of its state dues for 1959.

Taylor

The Taylor County Medical Society has paid 100 per cent of its state dues for 1959.

Volusia

Mr. Frank S. Castor, Director of the Bureau of Narcotics, Florida State Board of Health, Jacksonville, was principal speaker at the March meeting of the Volusia County Medical Society held at New Smyrna Beach. Mr. Castor discussed "Narcotic Problems in Volusia County and the Responsibility of Physicians."

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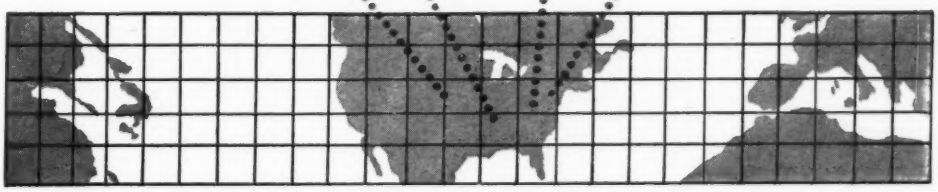

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	Syrup	one tbsp. q.i.d.
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References: 1. Smigel, J. O., et al.: J. Am. Ger. Soc., in press. 2. Freedman, A. M.: Pediat. Clin. North America 5:573 (Aug.) 1958. 3. Ayd, F. J., Jr.: New York J. Med. 57:1742 (May 15) 1957. 4. Menger, H. C.: New York J. Med. 58:1684 (May 15) 1958. 5. Coirault, M., et al.: Presse méd. 64:2239 (Dec. 26) 1956. 6. Bayart, J.: Presented at the International Congress of Pediatrics, Copenhagen, Denmark, July 22-27, 1956.

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NEW MEMBERS

The following doctors have joined the State Association through their respective county medical societies.

Adler, Sidney, Miami
Artzibushev, Constantin, Tampa
Balli, Carl E., Miami
Bates, James S. Jr., Hollywood
Bradley, Matthew H., Miami
Carratt, James A., Daytona Beach
Carroll, Maxwell G., Crestview
Dean, Henry L., Miami
DeLand, Frank H., Lakeland
Ehrenreich, Jacob, Coral Gables
Ellis, Ernest B., Coral Gables
Ewing, Richard M., Fort Lauderdale
Fuzy, Paul J. Jr., Fort Lauderdale
Gerspacher, Thomas S., South Miami
Goldstein, Norman, Sarasota
Goodrich, Howard B., Winter Park
Gordon, John E., Pompano Beach
Halpern, Arthur E., Miami
Harding, Paul C., Orlando
Jaffe, Robert J., Miami Beach
Jeffrey, Stewart L., Miami
Klein, Warren E., Fort Lauderdale
Litwak, Robert S., Miami
Lozman, Harvey, Miami
McEuen, Harry B. Jr., Jacksonville
McEuen, Marianne B., Jacksonville
Overby, Harry T., Miami
Parker, James W., Avon Park
Petkas, Nicholas S., West Palm Beach
Ross, Carl, Jacksonville
Rudolph, Burton M., Miami Shores
Saunders, Earl N., Marianna
Shaver, William A., Miami
Sherrill, Robert G. Jr., Tampa
Stephan, Ralph M., Tampa
Stocking, Bruce W., Fort Lauderdale
Swartzendruber, Frederick J., Sarasota
Thames, Rufus, Milton
Vaujin, Octavio A., Hollywood
Weisbart, Myron H., Fort Lauderdale
Wells, J. Ralston, Enterprise
Whitehorn, Clark A., Panama City

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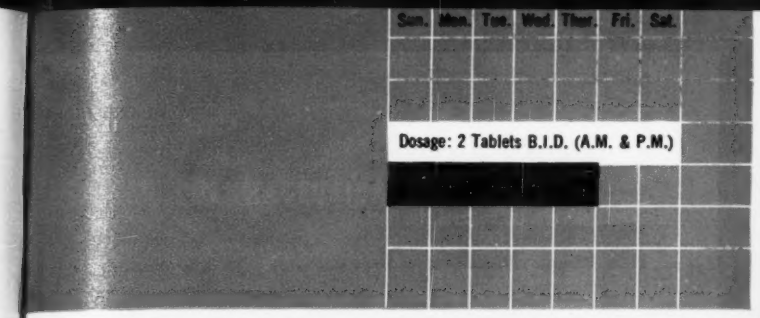

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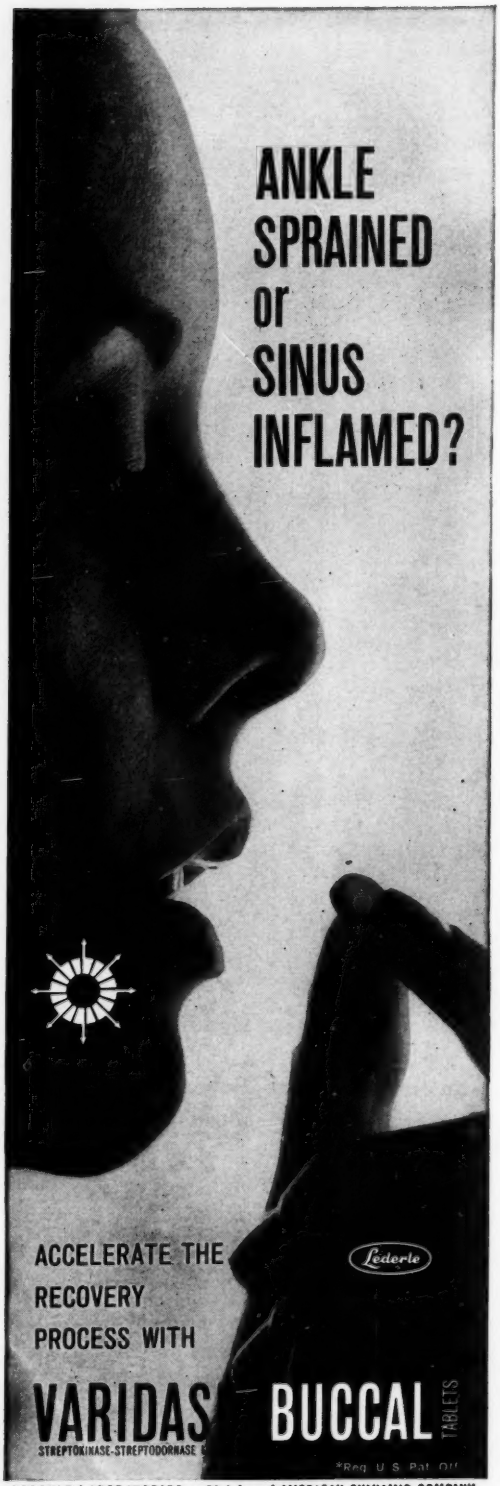

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Medical Licenses Granted

Dr. Homer L. Pearson Jr., secretary of the State Board of Medical Examiners, has reported that of the 279 applicants who took the examination of the Board, held November 24 and 25, 1958, in Miami Beach, 238 passed and have been issued licenses to practice medicine in Florida. The names and addresses of the 238 applicants follow:

Adeeb, Allan Jerome, Jacksonville (U. Tenn. 1957)
Aghajanian, George Kevork, Miami (Yale U. 1958)
Alfonso, Silvie Louis, Miami (U. Penn. 1957)
Anderson, Robert Hoyt Jr., Jacksonville (Med. Col. Georgia 1956)
Anthony, Bascom Frank, Macon, Ga. (Emory U. 1956)
Anzalone, Joseph Thomas, Pittsburgh (U. Pittsburgh 1957)
Aron, Jack Donald, Chicago (U. Illinois 1956)
Arroyo, Pedro Jr., Bronx, N. Y. (Columbia U. 1952)
Beacher, Milton Daniel, Brooklyn (G. Washington U. 1936)
Beber, Charles Robert, Miami (U. Nebraska 1954)
Beck, Richard Lowe, Pittsburgh (Hahnemann 1957)
Beck, Robert Anthony, Kalispell, Mont. (Indiana U. 1945)
Becker, Matthew Kurt, Miami (Washington U. 1958)
Beekman, Franklin, Miami (Boston U. 1956)
Bell, Robert Edgar Jr., Jacksonville (Bowman Gray 1958)
Belott, August Vincent, Tampa (U. Buffalo 1931)
Berg, Eliot Hubert, Brooklyn (State U. New York 1953)
Bradley, Donald John, Buffalo (New York Med. 1956)
Braman, Robert Tilden, Chicago (U. Illinois 1949)
Breakstone, Irving Lawrence, Miami Beach (Chicago Med. Sch. 1938)
Brock, Charles Lee, Philadelphia (Duke U. 1954)
Bronnenberg, Neel H., Tampa (Indiana U. 1953)
Brown, Marcus Frederick, Starke (U. Miami 1958)
Bullington, Donald Clifton, Hollywood (U. Michigan 1953)
Bullington, Walter Graham, Pensacola (Virginia Med. Col. 1957)
Bunim, Louis Albert, Brooklyn (New York U. 1923)
Burke, Herbert Anderson Jr., Pensacola (Vanderbilt U. 1955)
Butler, William Joseph, St. Joseph, Mich. (U. Illinois 1941)
Campbell, Thomas Allen, Bay Pines (Loyola U. 1951)
Campbell, Thomas Edward, Tampa (U. Louisville 1958)
Carroll, John Joseph, Niagara Falls (U. Western Ontario 1938)
Cashman, Edward Leonard Jr., Gainesville (Tufts 1949)
Cebula, Jerome Matthew, North Bergen, N. J. (Long Island Col. Med. 1940)
Chobot, Edwin Frank Jr., Lookout Mountain, Tenn. (U. Tenn. 1953)
Clancy, Daniel Henry Jr., Boston (Tufts 1943)
Clegg, Frederick Lee, St. Petersburg (Ohio St. U. 1958)
Cobos, Limbano, Daytona Beach (U. Havana 1950)
Cohen, Harold A., Miami (Indiana U. 1958)
Cohen, Irving Victor, Key West (Alabama Med. Col. 1957)
Cohen, Jerome Irwin, St. Petersburg (Jefferson 1958)
Cole, George William, Miami (U. Miami 1958)
Coleman, John Frederick, Toledo, Ohio (Ohio St. U. 1958)
Colton, Edmund John, Colorado Springs, Colo. (Northwestern U. 1946)
Conway, John Herbert, Larchmont, N. Y. (U. Cinn. 1928)
Cooke, James Kenneth Jr., Cecil Field (U. Tenn. 1955)
Cooke, Reginald Henry, Jacksonville (St. U. Syracuse 1955)

(Continued on page 1348)

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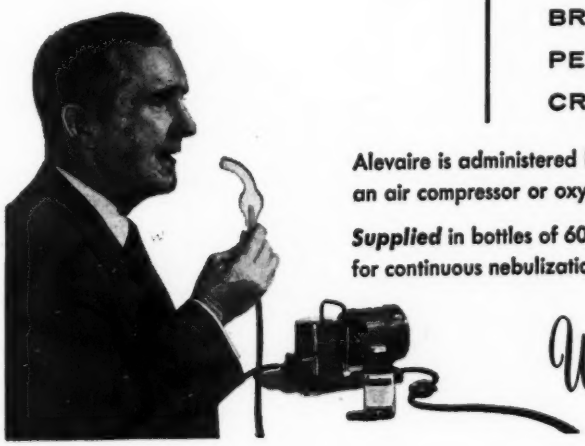

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(Continued from page 1340)

Copit, Paul Stanford, Philadelphia (Temple U. 1952)
Corrill, Edgar Martin, Beckley, West Va. (U. Cinn. 1941)
Cottrell, William Wilson, West Palm Beach (U. Louisville 1958)
Cox, John Mark, (Col.), Tuskegee, Ala. (Col. Med. Evangelists 1943)
Crane, George Joel, Miami (U. Geneva 1956)
Cross, Ralph Edgar, Johnson City, Tenn. (U. Tenn. 1942)
Cytowic, Edmund Richard, Trenton, N. J. (Hahnemann 1947)
Dam, Michael Edward Jr., Jacksonville (Marquette U. 1958)
Darrow, Robert Stewart, Tarpon Springs (U. Oklahoma 1939)
DeConna, Theodore John, Pennsauken, N. J. (Hahnemann 1956)
Dickinson, Thomas Coston, Atlanta, Ga. (Emory U 1954)
Dippy, Walter Edward, Orlando (Emory U. 1958)
Dominguez, Jose Ramon, Daytona Beach (U. Havana 1952)
Donelan, G. Lynn, Miami (Temple U. 1956)
Donovan, Francis Connor Jr., Miami (Georgetown U. 1958)
Duany, Antonio Jose, Tampa (U. Havana 1948)
DuPuy, Samuel Stuart, Coral Gables (Med. Col. Virginia 1938)
Eavey, James Lee, Baltimore, (U. Maryland 1946)
Ebbinghouse, Joseph Charles, Jacksonville (Indiana U. 1954)
Eitzman, Donald Vern, Gainesville (St. U. Iowa 1954)
Ellis, Charles Thomas, Hialeah (U. Miami 1957)
Erickson, Alexander John Jr., Coconut Grove (Temple U. 1951)
Fadem, Jerold Joseph, Miami (Missouri U. 1958)
Falconer, Hugh Scott, Temple, Texas (U. Miami 1958)
Falk, Gerald David, New York (New York U. 1957)
Fields, Herbert, Philadelphia (Hahnemann 1958)
Fishkoff, Daniel, Miami (Cornell U. 1957)
Fogel, Norman Allen, Miami (Jefferson 1958)
Fortunoff, Stephen, Philadelphia (Tulane U. 1958)
Franklin, Norman, Pittsburgh (Med. Col. Virginia 1957)
Gant, George Albert, Austin, Texas (U. Miami 1958)
Gargano, Fredie Patrick, Miami (G. Washington U. 1952)
George, Charles William, Jacksonville (U. Tenn. 1958)
Gersing, Albert, Atlanta, Ga. (Emory U. 1958)
Gilbert, Gordon Joel, New Haven, Conn. (New York U. 1957)
Giles, Conrad Leslie, Ann Arbor, Mich. (U. Michigan 1957)
Gilmer, Raymond Evans Jr., Birmingham, Ala. (Alabama Med. Col. 1958)
Glen, Robert Story, Gainesville (Leland Stanford U. 1954)
Goddard, Ralph Andrew, Miami (Boston U. 1957)
Goethals, Paul Lawrence, St. Petersburg (Stritch Sch. Med. 1958)
Goldrich, James Stewart, Cleveland Heights, Ohio (Ohio St. U. 1956)
Goldstein, Morton Lawrence, Pittsburgh (U. Pittsburgh 1957)
Goulard, Alexander Jr., East Norwich, L. I., N. Y. (Jefferson 1948)
Grabb, William Clarence, Ann Arbor, Mich. (U. Michigan 1953)
Granowitz, Samuel Phillip, Pittsburgh (U. Pittsburgh 1958)
Gray, James Alva, Miami (Tulane U. 1958)
Habeeb, Edna Marie, St. Petersburg (Woman's Med. Col. Penn. 1950)
Haber, Mordecai, Hollywood (Tufts 1933)
Hancock, William Roy, Decatur, Ga. (Med. Col. Georgia 1948)
Hanfling, Stanley Martin, Miami (Cornell U. 1955)
Harper, Clarence Herman, Jacksonville (Emory U. 1957)
Harper, John Masters, Jacksonville, N. C. (U. Michigan 1956)

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orange flavored, 2 oz. bottle, 125 mg. per teaspoonful (5 cc.)

pediatric drops
orange flavored, 10 cc. bottle (with calibrated dropper), 5 mg. per drop (100 mg. per cc.)

Note: Rapid and high initial antibiotic blood levels are an important factor in uneventful recoveries. Glucosamine potentiation provides the fastest, highest tetracycline levels available with oral therapy. Bibliography and professional information booklet available on request.

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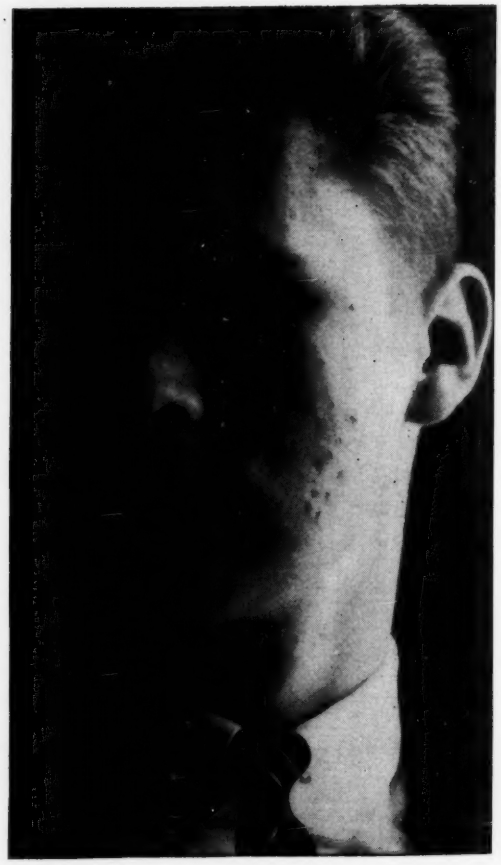
*Trademark for glucosamine-potentiated tetracycline

Harris, Stanley Irving, Bronx, N. Y. (Yale U. 1958)
Harrison, William Vanbrooks, Ormond Beach (New York U. 1950)
Heggie, John Francis, Ridgewood, N. J. (Columbia U. 1955)
Herman, Gerald Paul, Miami (U. Chicago 1958)
Hester, Frederick Cummins III, Mobile, Ala. (U. Miami 1958)
Hewitt, James Carlisle, Tampa (South Carolina Med. Col. 1958)
Hoefle, Harold Harry Jr., Maxwell AFB, Ala. (McGill U. 1955)
Hoff, Theodore Francis, Orlando (U. Kansas 1952)
Hofmann, Alan Frederick, Longboat Key (Johns Hopkins 1955)
Holtzman, Saul Charles, St. Petersburg (Boston U. 1943)
Hood, Bobby Joe, St. Petersburg (Tulane U. 1958)
Hope, Sherman Allen, Panama City (U. Oklahoma 1957)
Horland, Ephraim, Hollywood (U. Zurich 1936)
Howard, Robert Clifton, Jacksonville (U. Miami 1958)
Hutington, Sterling Hicks, Miami(Albany Med. Col. 1946)
Jackson, Thomas Mendel, West Palm Beach (U. Tenn. 1955)
Janower, Murray Lee, Detroit (Wayne St. U. 1958)
Jennings, Clark William Jr., Tampa (Tulane U. 1954)
Jensen, Adrian Richard, Roslindale, Mass. (U. Minn. 1946)
Johnson, Robert Armstrong, Jackson, Miss. (Vanderbilt U. 1957)
Johnson, William Vernon, Tampa (U. Louisville 1958)
Jones, Jenner Garnett, Orlando (Washington U. 1927)
Kaiser, Frank Fremont Jr., Buffalo (New York U. 1948)
Karpas, Charles M., Miami (New York Med. 1952)
Katz, Philip, Fort Thomas, Ky. (Ohio St. U. 1931)
Katz, Sidney, University Heights, Ohio (Tulane U. 1958)
Kaufman, Raymond Earl, Lake Worth (U. Louisville 1957)
King, Robert Lee Jr., Pensacola (U. Minn. 1946)
Klein, Robert Edward, Gainesville (Bowman Gray 1951)
Knowles, Albert Carnes, Bradenton (U. Miami 1958)
Koenig, Marvin Irwin, Miami (St. Louis U. 1958)
Korn, John Thomas, Miami (U. Buffalo 1958)
Kyle, Michael Andrew Whiting, Ind. (Indiana U. 1958)
Langford, George Curtis Jr., Bridgeport, Conn. (U. Miami 1958)
Lee, Joe Hunter, Merritt Island (Louisiana St. U. 1955)
Leitheiser, Karl Arthur, Clearwater (Georgia Med. Col. 1952)
Letchworth, George Wallace, Dade City (U. Miami 1958)
Lewis, Alvin Russell, Birmingham, Ala. (U. Michigan 1954)
Linstruth, Kenneth Albert, St. Petersburg (Albany Med. Col. 1954)
Lipinski, Stanley Wnuk, Lakeland (Northwestern U. 1951)
Lomas, Richard Wilson, New York (Western Reserve U. 1957)
MacDonald, Donald Ian, Jacksonville (Temple U. 1958)
McAllister, Marianna, Miami (U. Tenn. 1957)
McGinty, James Jerome, Gainesville (U. Rochester 1955)
McKee, Duncan Malloy, Baltimore (Vanderbilt U. 1949)
Mandell, Arnold Joseph, New Orleans (Tulane U. 1958)
Mann, Hartley James, Pittsburgh (U. Pittsburgh 1955)
Marsh, Albert Peter, Brooklyn (New York U. 1955)
Mauzy, Merritt Clifford, Ann Arbor, Mich. (Indiana U. 1944)
May, John Albert, Miami (Bowman Gray 1955)
Mazzola, Vincent Pontorno, Booklyn (Long Island Col. Hosp. 1923)
Messenger, George Paul Jr., Miami (Marquette U. 1958)
Meyer, George John, Opa Locka (U. Rochester 1952)
Michael, Max Jr., Jacksonville (Harvard 1939)
Miller, Edwin Bert, Jacksonville (Col. Med Evangelists 1958)
Miller, George Henry Jr., Gainesville (U. Penn. 1948)
Miller, Herbert Adlai Jr., Tampa (U. Miami 1958)
Milligan, Alexander Denholm, Savannah, Ga. (Queen's U. 1933)

(Continued on page 1370)



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1. Hodges, F.T.: GP 14:86, Nov., 1956.